Midi System AS665C/22/34

Service
Service
Service

Service Manual

Introduction of AS665C/22/34

For Service documentation please refer to Service Manual AS665C/30/41 - 4822 725 25664

AS665C/22/34 refers to AS665C/41 with the following adaptations:

1. Mechanical & Accessories

-	4822 736 15128	Instruction for use /22
-	4822 736 14878	Instruction for use /34
5280	4822 146 10491	Mains Transformer

2. Power Module

Delete:	1202		Voltage Selector
	1205		Fuse T2A 250V
	9203		Bare wire
	9214		Bare wire
Add:	9205	-	Bare wire
	9207	-	Bare wire
	9215	-	Bare wire

3. Tuner Board

AS665C/22 : Refer to enclosed Tuner 95 pages
AS665C/34 : Refer to ECO5 Tuner East. Europe FM band: 65.81 - 74MHz and 87.5 - 1.8MHz

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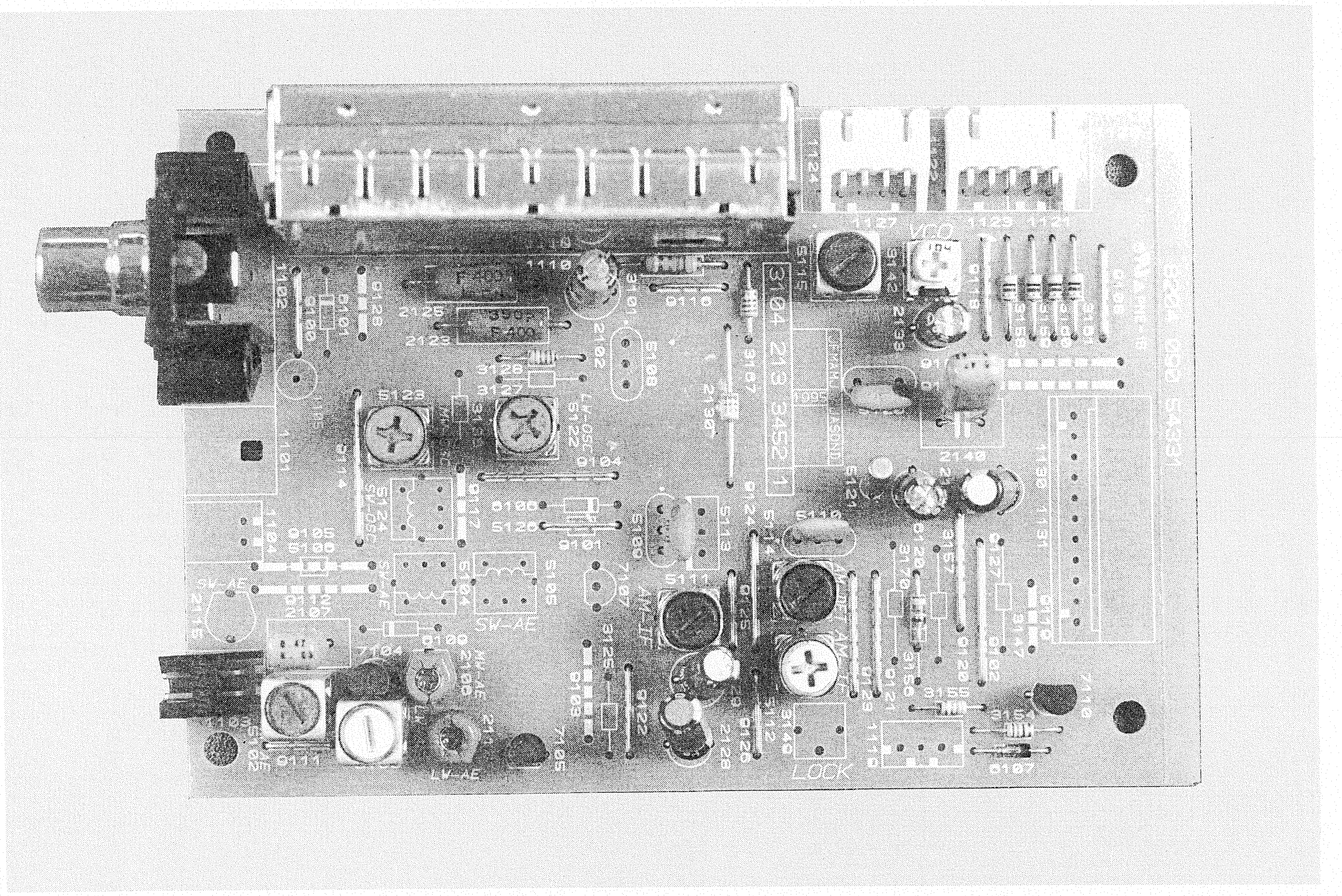
4822 725 25709

PCS 96 538

PHILIPS

2573

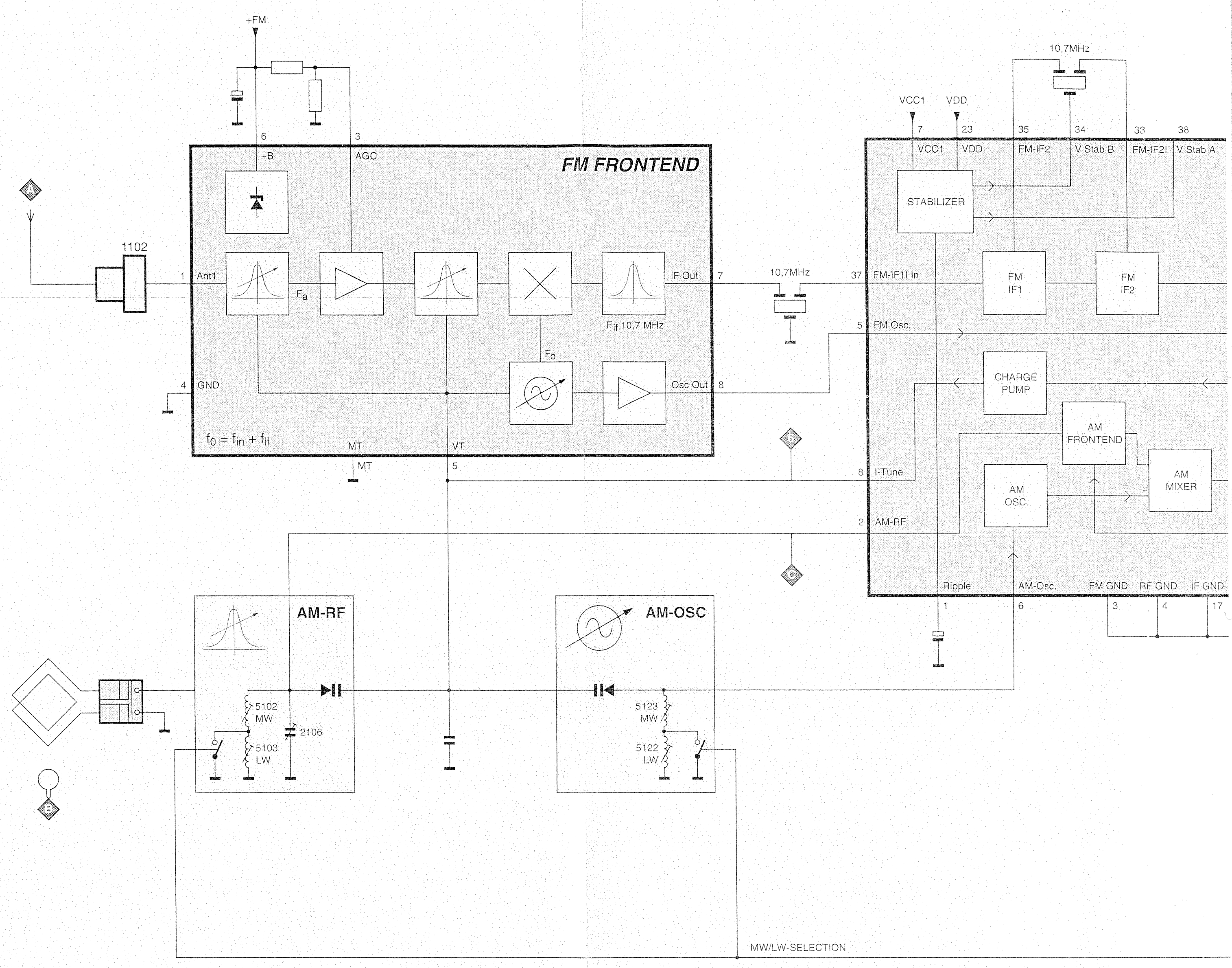


TUNER 95 BOARD

TABLE OF CONTENTS

Blockdiagram 7D-1
Adjustmant table 7D-2
Component layout..7D-2
Circuit diagram...7D-3
Partslist 7D-4

BLOCKDIAGRAM


+FM
6
3
+B
AGC
FM FRONTEND
A
1102
1 Ant1
Fa
IF Out 7
Fif 10,7 MHz
Fo
4 GND
Osc Out 8
f0 = fin + fif
MT
VT
MT
5
10,7MHz
10,7MHz
VCC1
VDD
7
23
35
34
33
38
VCC1
VDD
FM-IF2
V Stab B
FM-IF2I
V Stab A
STABILIZER
37 FM-IF1I In
FM IF1
FM IF2
5 FM Osc.
CHARGE PUMP
AM FRONTEND
AM MIXER
AM OSC.
8 I-Tune
2 AM-RF
Ripple
AM-Osc.
FM GND
RF GND
IF GND
1
6
3
4
17
B
C
AM-RF
5102 MW
5103 LW
2106
AM-OSC
5123 MW
5122 LW
B
MW/LW-SELECTION

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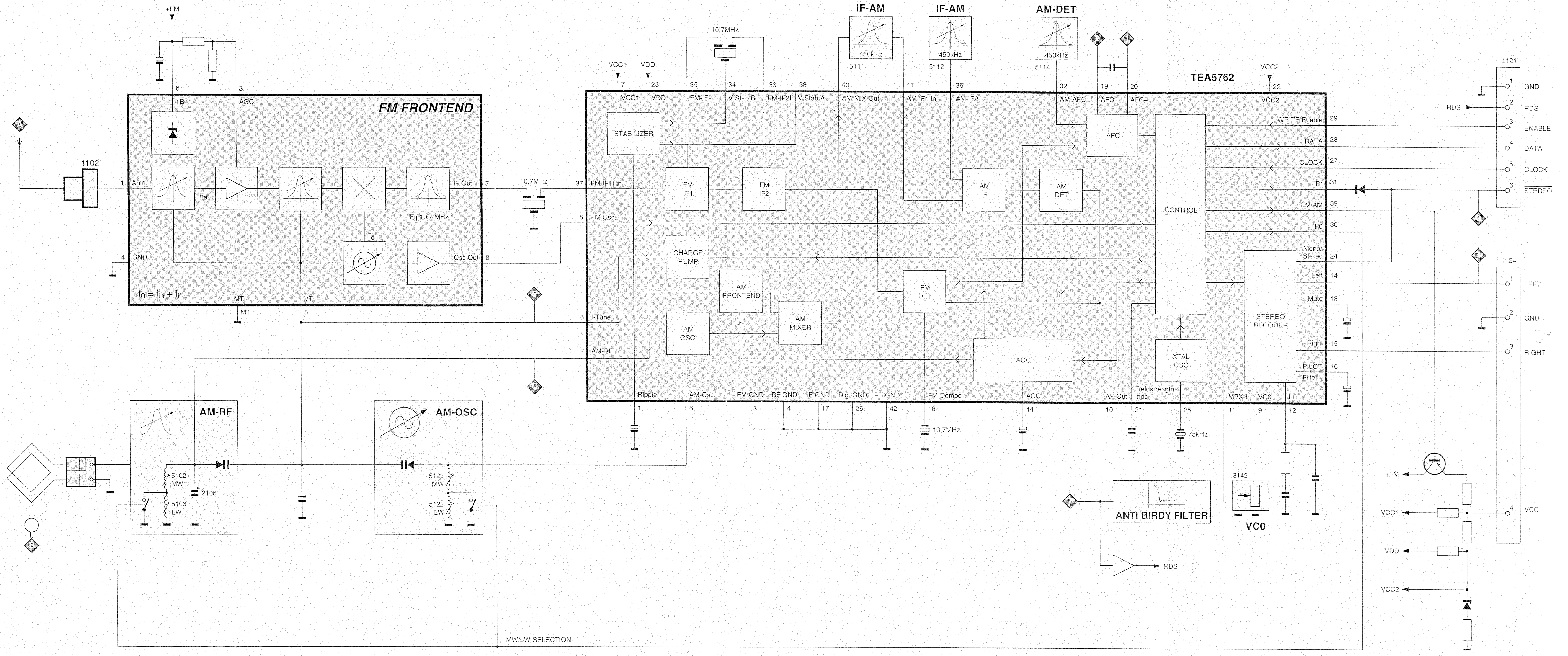
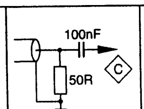
BLOCKDIAGRAM



+FM
6
+B
3
AGC
FM FRONTEND
1102
1 Ant1
F_a
IF Out 7
F_{if} 10,7 MHz
F_o
Osc Out 8
4 GND
$f_0 = f_{in} + f_{if}$
MT
VT
5
10,7MHz
VCC1
VDD
7
23
10,7MHz
35
34
33
38
40
41
36
IF-AM
450kHz
5111
IF-AM
450kHz
5112
AM-DET
450kHz
5114
32
19
20
VCC2
22
TEA5762
VCC1
VDD
FM-IF2
V Stab B
FM-IF2I
V Stab A
AM-MIX Out
AM-IF1 In
AM-IF2
AM-AFC
AFC-
AFC+
VCC2
STABILIZER
AFC
37 FM-IF1I In
5 FM Osc.
FM IF1
FM IF2
AM IF
AM DET
CONTROL
CHARGE PUMP
AM FRONTEND
AM MIXER
FM DET
AM OSC.
AGC
XTAL OSC
STEREO DECODER
8 I-Tune
2 AM-RF
WRITE Enable 29
DATA 28
CLOCK 27
P1 31
FM/AM 39
P0 30
Mono/ Stereo 24
Left 14
Mute 13
Right 15
PILOT Filter 16
Ripple
AM-Osc.
FM GND
RF GND
IF GND
Dig. GND
RF GND
FM-Demod
AGC
AF-Out
Fieldstrength Indc.
MPX-In
VC0
LPF
1
6
3
4
17
26
42
18
10,7MHz
44
10
21
25
75kHz
11
9
12
AM-RF
5102 MW
5103 LW
2106
AM-OSC
5123 MW
5122 LW
ANTI BIRDY FILTER
3142
VC0
RDS
MW/LW-SELECTION
1121
1 GND
RDS
2 RDS
3 ENABLE
4 DATA
5 CLOCK
6 STEREO
1124
1 LEFT
2 GND
3 RIGHT
4 VCC
+FM
VCC1
VDD
VCC2
A
B
C
1
2
3
4
7

2573

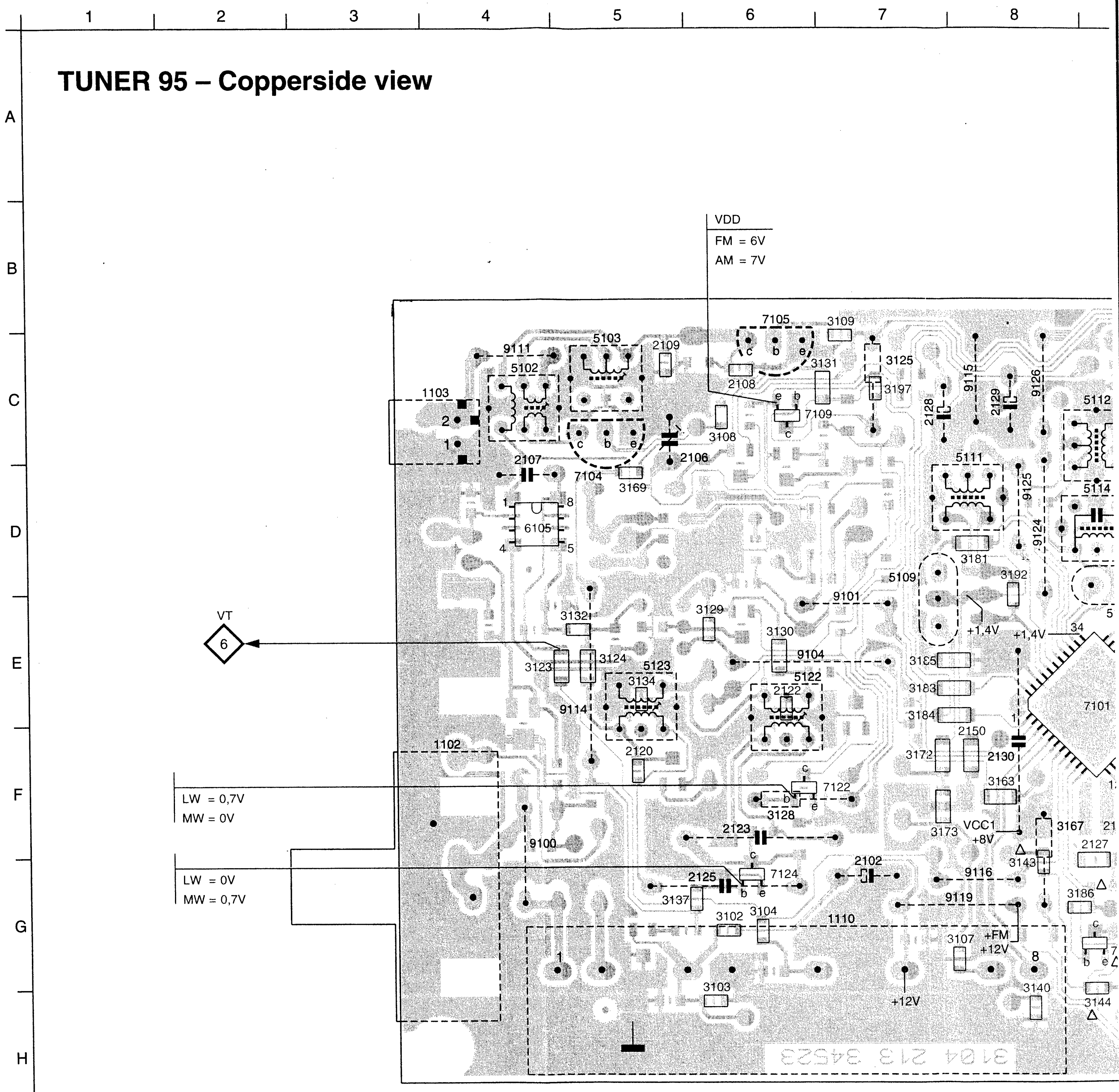
ADJUSTMENT TABLE

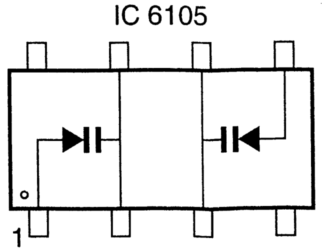
Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check	◇6	7...9V
			87.5MHz	check		1.3...2V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123		8.3V ±0.2V
			531kHz	check		1V ±0.4V
LW 153 - 279kHz (3kHz grid)			279kHz	5122		8.3V ±0.2V
			153kHz	check		1V ±0.4V
FM - VCO						
FM	98MHz 1mV continuous wave	◇A	98MHz	3142	◇3	152kHz ±1kHz
DISTORTION						
FM	98MHz 1mV 90% L, 9% pilot mod=1kHz	◇A	98MHz	mixcoil inside tuner 1110	◇4	min. distortion
AM IF						
MW	450kHz Δf=10kHz as low as possible			5111	◇7	symmetrical and max. height ↕
				5112		
	450.0kHz continuous wave	◇C		5114	◇1 ◇2	0mV ±2mV
AM RF						
MW	588kHz mod=1kHz, 30% AM 1494kHz	◇B*	558kHz	5102	◇7	MAX ↕
			1494kHz	2106		
LW	198kHz mod=1kHz, 30% AM		198kHz	5103		MAX

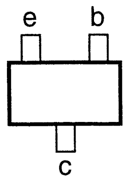
* Signal supplied via frame antenna

↕ Repeat

TUNER 95 – Copperside view

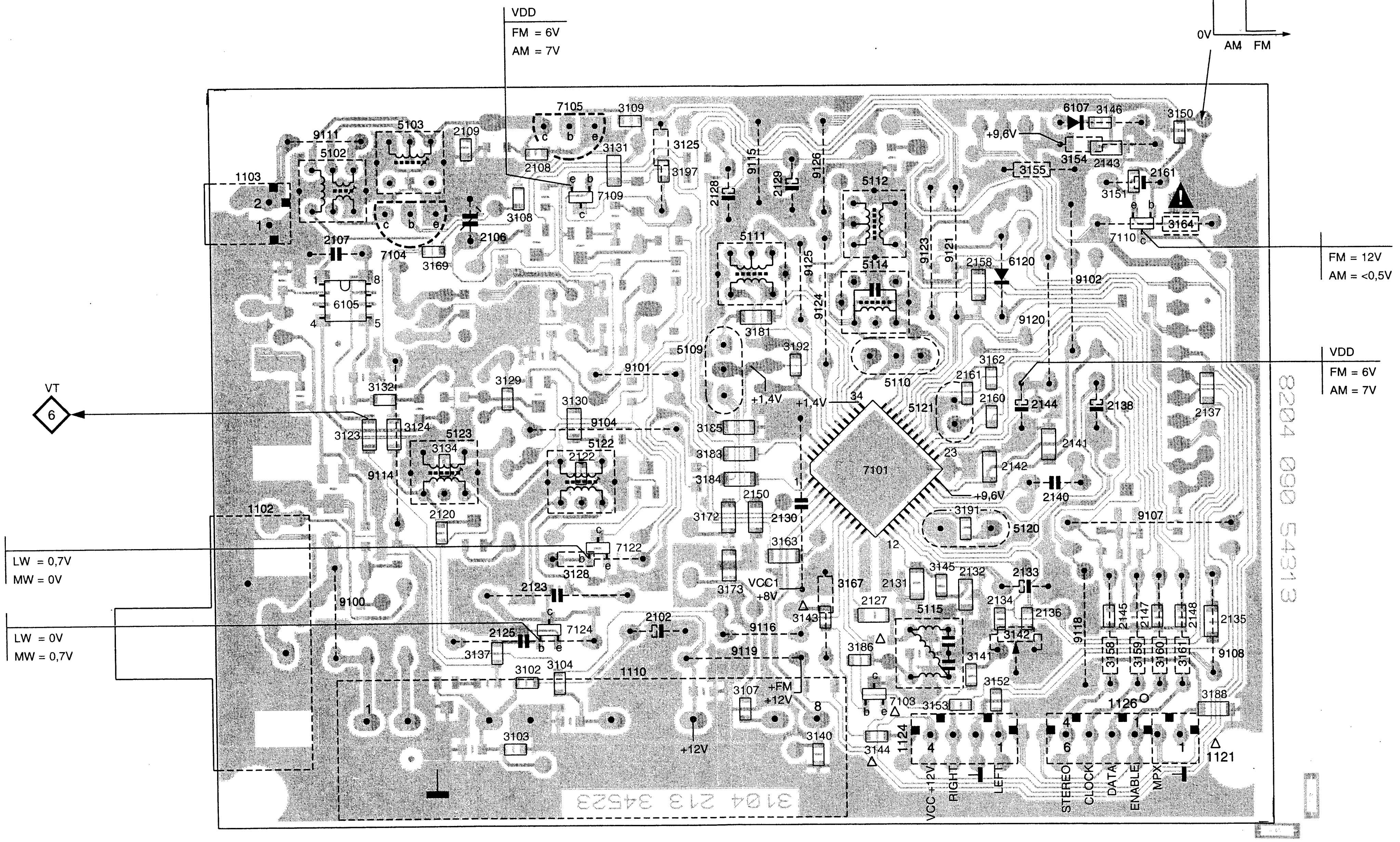

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
VDD
FM = 6V
AM = 7V
VT
6
LW = 0,7V
MW = 0V
LW = 0V
MW = 0,7V
1103
1102
1110
5102
5103
5111
5112
5114
5122
5123
5109
6105
7101
7104
7105
7109
7122
7124
9100
9101
9104
9111
9114
9115
9116
9119
9124
9125
9126
2106
2107
2108
2109
2102
2120
2122
2123
2125
2127
2128
2129
2130
2150
3102
3103
3104
3107
3108
3109
3123
3124
3125
3128
3129
3130
3131
3132
3134
3137
3140
3143
3144
3163
3165
3167
3169
3172
3173
3181
3183
3184
3186
3192
3197
+1,4V
VCC1
+8V
+FM
+12V
3104 213 34523





TUNER 95
3104 217 04120/04340 bl. 110 - 01

TUNER 95 – Copperside view

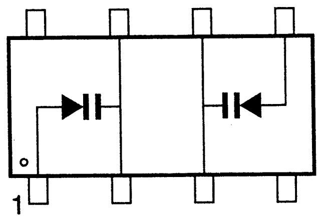


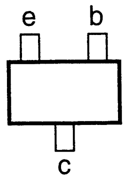
VDD
FM = 6V
AM = 7V
V
0V
AM
FM
FM = 12V
AM = <0,5V
VDD
FM = 6V
AM = 7V
VT
6
LW = 0,7V
MW = 0V
LW = 0V
MW = 0,7V
1103
1102
1110
1124
1126
1121
5102
5103
5109
5110
5111
5112
5114
5115
5120
5121
5122
5123
6105
6107
6120
7101
7103
7104
7105
7109
7110
7122
7124
+9,6V
+1,4V
VCC1
+8V
+FM
+12V
+12V
VCC +12V
RIGHT
LEFT
STEREO
CLOCK
DATA
ENABLE
MPX
8204 090 54313
3104 213 34523

△ only FW650 (04120)

○ only FW610 (04340)

IC 6105





1102	F4
1103	C3
1110	G7
1121	H11
1124	H9
1126	G10
2102	G7
2106	C5
2107	D4
2108	C6
2109	C5
2120	F5
2122	E6
2123	F6
2125	G5
2127	F8
2128	C7
2129	C8
2130	F8
2131	F9
2132	F9
2133	F10
2134	F9
2135	G11
2136	G10
2137	E11
2138	E10
2140	F10
2141	E10
2142	E10
2143	C10
2144	E10
2145	G11
2147	G11
2148	G11
2150	F8
2158	D9
2160	E9
2161	E9
2161	C11
3102	G6
3103	H6
3104	G6
3107	G7
3108	C6
3109	B7
3123	E4
3124	E5
3125	C7
3128	F6
3129	E6
3130	E6
3131	C6
3132	E5
3134	E5
3137	G5
3140	H8
3141	G9
3142	G10
3143	G8
3144	H8
3145	F9
3146	B10
3150	C11
3151	C10
3152	G9
3153	G9
3154	C10
3155	C10
3158	G10
3159	G11
3160	G11
3161	G11
3162	E9
3163	F8
3164	C11
3167	F8
3169	D5
3172	F7
3173	F7
3181	D8
3183	E7
3184	E7
3185	E7
3186	G8
3188	G11
3191	F9
3192	D8
3197	C7
5102	C4
5103	C5
5109	D7
5110	E9
5111	C8
5112	C9
5114	D9
5115	G9
5120	F10
5121	E9
5122	E6
5123	E5
6105	D4
6107	B10
6120	D10
7101	E9
7103	G9
7104	D5
7105	B6
7109	C6
7110	D11
7122	F7
7124	G6
9100	F4
9101	E7
9102	D10
9104	E6
9107	F11
9108	G11
9111	C4
9114	E5
9115	C8
9116	G8
9118	G10
9119	G7
9120	D10
9121	D9
9123	D9
9124	D8
9125	D8
9126	C8

TUNER 95
3104 217 04120/04340 bl. 110 - 01

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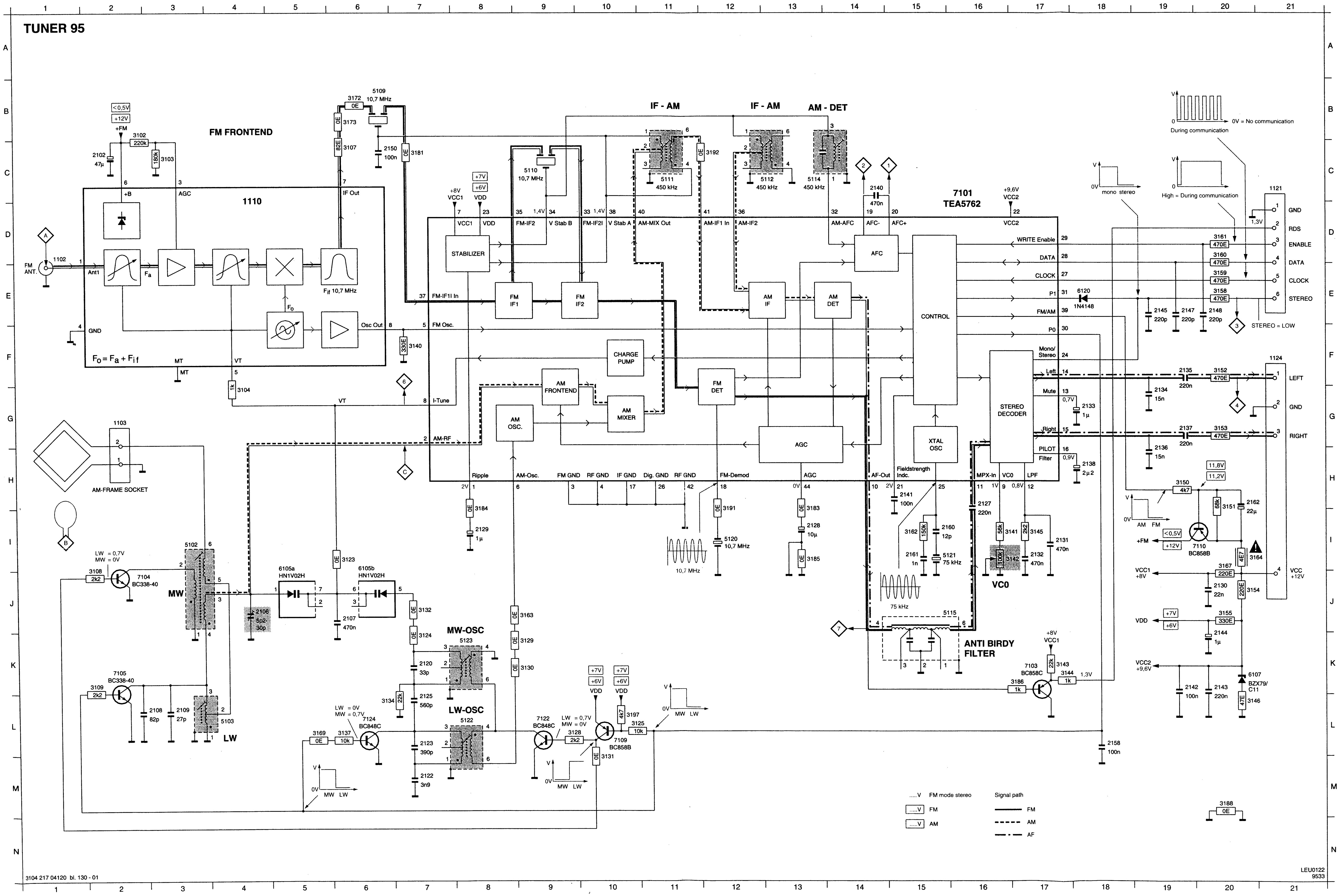
9533

1102	D1	1124	F21	2108	L3	2123	L7	2129	I8	2133	G18	2137	G19	2142	K19	2147	E19	2160	I15	3103	C3	3109	K2	3128	L9	3132	J7	3141	I16	3145	I17	3152	F20	3158	E20	3162	I15	3169	L5	3183	I13	3188	M20	5102	I3	5111	C11	5120	I12	6105a	I5	7101	C16	7109	L10
1103	G2	2102	C2	2109	L3	2125	L7	2130	J20	2134	G19	2138	H18	2143	K20	2148	E20	2161	I15	3104	G4	3123	I6	3129	K9	3134	L6	3142	I16	3146	L20	3153	G20	3159	E20	3163	J9	3172	B6	3184	I8	3191	I12	5103	L4	5112	C12	5121	I15	6105b	I6	7103	K17	7110	I19
1110	D4	2106	J4	2120	K7	2127	H16	2131	I17	2135	F19	2140	C14	2144	K20	2150	C6	2162	H20	3107	C6	3124	K7	3130	K9	3137	L6	3143	K17	3150	H19	3154	J20	3160	D20	3164	I20	3173	B6	3185	I13	3192	C12	5109	B6	5114	C13	5122	L8	6107	K20	7104	J2	7122	L9
1121	C21	2107	J6	2122	M7	2128	I13	2132	I17	2136	H19	2141	H15	2145	E19	2158	L18	3102	B2	3108	J2	3125	L10	3131	M10	3140	F7	3144	K17	3151	I20	3155	J20	3161	D20	3167	I20	3181	C7	3186	K16	3197	L10	5110	C9	5115	J15	5123	K8	6120	E18	7105	K2	7124	L6

TUNER 95



FM FRONTEND
1110
FM ANT.
1102
Ant1
GND
+B
AGC
IF Out
Osc Out
F_a
F_if 10,7 MHz
F_o
F_o = F_a + F_if
MT
VT
<0,5V
+12V
+FM
3102 220k
2102 47µ
3103 180k
3104 1k
3140 330E
3172 0E
3173 0E
3107 82E
5109 10,7 MHz
2150 100n
3181 0E
5110 10,7 MHz
IF - AM
IF - AM
AM - DET
5111 450 kHz
5112 450 kHz
5114 450 kHz
3192 0E
2140 470n
7101 TEA5762
+8V VCC1
VDD
+7V
+6V
+9,6V VCC2
VCC1
VDD
FM-IF2
V Stab B
FM-IF2I
V Stab A
AM-MIX Out
AM-IF1 In
AM-IF2
AM-AFC
AFC-
AFC+
VCC2
STABILIZER
FM-IF1I In
FM Osc.
I-Tune
AM-RF
FM IF1
FM IF2
CHARGE PUMP
AM FRONTEND
AM MIXER
AM OSC.
FM DET
AM IF
AM DET
AFC
CONTROL
AGC
XTAL OSC
STEREO DECODER
WRITE Enable
DATA
CLOCK
P1
FM/AM
P0
Mono/Stereo
Left
Mute
Right
PILOT Filter
Ripple
AM-Osc.
FM GND
RF GND
IF GND
Dig. GND
RF GND
FM-Demod
AGC
AF-Out
Fieldstrength Indc.
MPX-In
VC0
LPF
6120 1N4148
2145 220p
2147 220p
2148 220p
3161 470E
3160 470E
3159 470E
3158 470E
1121
GND
RDS
ENABLE
DATA
CLOCK
STEREO
STEREO = LOW
0V = No communication
During communication
High = During communication
mono stereo
1124
LEFT
GND
RIGHT
2135 220n
3152 470E
2134 15n
2133 1µ
2137 220n
3153 470E
2136 15n
2138 2µ2
3184 0E
2129 1µ
3191 0E
5120 10,7 MHz
10,7 MHz
3183 0E
2128 10µ
3185 0E
2141 100n
3162 150k
2160 12p
2161 1n
5121 75 kHz
75 kHz
2127 220n
3141 56k
3142 100k
3145 2k2
2132 470n
2131 470n
VC0
5115
ANTI BIRDY FILTER
3150 4k7
11,8V
11,2V
AM FM
3151 68k
2162 22µ
7110 BC858B
3164 4E7
3167 220E
VCC1 +8V
2130 22n
3154 220E
VCC +12V
VDD
3155 330E
2144 1µ
VCC2 +9,6V
2142 100n
2143 220n
6107 BZX79/C11
3146 47E
7103 BC858C
3143 22k
3144 1k
3186 1k
1,3V
2158 100n
3188 0E
1103
AM-FRAME SOCKET
5102
LW = 0,7V MW = 0V
3108 2k2
7104 BC338-40
MW
2106 5p2-30p
6105a HN1V02H
6105b HN1V02H
3123 0E
2107 470n
3132 0E
3124 0E
MW-OSC
5123
2120 33p
2125 560p
3134 22k
LW-OSC
5122
2123 390p
2122 3n9
3163 0E
3129 0E
3130 0E
7105 BC338-40
3109 2k2
2108 82p
2109 27p
5103
LW
3169 0E
3137 10k
7124 BC848C
LW = 0V MW = 0,7V
7122 BC848C
LW = 0,7V MW = 0V
3128 2k2
7109 BC858B
3197 4k7
3125 10k
3131 0E
MW LW
.....V FM mode stereo
.....V FM
.....V AM
Signal path
FM
AM
AF
3104 217 04120 bl. 130 - 01
LEU0122 9533

ELECTRICAL PARTSLIST TUNER 95 BOARD

MISCELLANEOUS

1102	4822 267 10283	SOCKET COAX IEC 75R
1103	4822 265 31184	JST CONNECTOR 2 POLE
1110	4822 210 10492	FRONTEND ASSY /02/08

DIODES

6105	4822 130 83075	HN1V02H
6107	4822 130 34488	BZX79-C11
6120	4822 130 30621	1N4148

TRANSISTORS

7103	4822 130 42513	BC858C
7104	5322 130 44779	BC338-40
7105	5322 130 44779	BC338-40
7109	5322 130 41983	BC858B
7110	5322 130 41983	BC858B
7122	5322 130 42136	BC848C
7124	5322 130 42136	BC848C

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1

COILS

5102	4822 157 71634	RF-COIL MW
5103	4822 157 71635	RF-COIL LW
5109	4822 157 71639	CER. FILTER 10,7MHz
5110	4822 242 70665	CER. FILTER 10,7MHZ
5111	4822 158 60511	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 71637	AM-AFC FILTER 450KHZ
5115	4822 157 71636	ANTI-BIRDY FILTER
5120	4822 242 82065	CER. DISCRIMINATOR
5121	4822 242 81021	QUARTZ 75kHz
5122	4822 157 60517	RF-COIL AM
5123	4822 157 60517	RF-COIL AM

RESISTORS

3125	4822 116 83864	10k	5%	0,5W
3128	4822 116 52256	2k2	5%	0,16W
3142	4822 100 11163	TRIMPOT. 100K LIN.		
3154	4822 116 52215	220R	5%	0,16W
3155	4822 116 52219	330R	5%	0,5W
3158	4822 116 52224	470R	5%	0,5W
3159	4822 116 52224	470R	5%	0,5W
3160	4822 116 52224	470R	5%	0,5W
3161	4822 116 52224	470R	5%	0,5W
3164	4822 052 10478	4R7	5%	NFR
3167	4822 116 52215	220R	5%	0,16W

CHIP RESISTORS

3102	4822 051 20224	220k	5%	0,1W
3103	4822 051 20184	180k	5%	0,1W
3104	4822 051 10102	1k	2%	0,25W
3107	4822 051 20829	82R	5%	0,1W
3108	4822 051 20222	2k2	5%	0,1W
3109	4822 051 20222	2k2	5%	0,1W
3123	4822 051 10008	CHIP JUMPER 1206		
3124	4822 051 10008	CHIP JUMPER 1206		
3129	4822 051 20008	CHIP JUMPER 0805		
3130	4822 051 10008	CHIP JUMPER 1206		

CHIP RESISTORS

3131	4822 051 10008	CHIP JUMPER 1206		
3132	4822 051 20008	CHIP JUMPER 0805		
3134	4822 051 20223	22k	5%	0,1W
3137	4822 051 20103	10k	5%	0,1W
3140	4822 051 20331	330R	5%	0,1W
3141	4822 051 20563	56k	5%	0,1W
3143	4822 051 20223	22k	5%	0,1W
3144	4822 051 10102	1k	2%	0,25W
3145	4822 051 20222	2k2	5%	0,1W
3146	4822 051 20479	47R	5%	0,1W
3150	4822 051 20472	4k7	5%	0,1W
3151	4822 051 20683	68k	5%	0,1W
3152	4822 051 20471	470R	5%	0,1W
3153	4822 051 20471	470R	5%	0,1W
3162	4822 051 20154	150k	5%	0,1W
3163	4822 051 10008	CHIP JUMPER 1206		
3169	4822 051 20008	CHIP JUMPER 0805		
3172	4822 051 10008	CHIP JUMPER 1206		
3173	4822 051 10008	CHIP JUMPER 1206		
3181	4822 051 10008	CHIP JUMPER 1206		
3183	4822 051 10008	CHIP JUMPER 1206		
3184	4822 051 10008	CHIP JUMPER 1206		
3185	4822 051 10008	CHIP JUMPER 1206		
3186	4822 051 10102	1k	2%	0,25W
3188	4822 051 10008	CHIP JUMPER 1206		
3191	4822 051 20008	CHIP JUMPER 0805		
3192	4822 051 20008	CHIP JUMPER 0805		
3197	4822 051 20472	4k7	5%	0,1W

CAPACITORS

2102	4822 124 40433	47µF	20%	25V
2106	4822 125 60102	30pF	VARIABLE	
2107	4822 121 51252	470nF	5%	63V
2123	4822 121 51254	390pF	1%	400V
2125	4822 121 51381	560pF	1%	400V
2128	4822 124 41579	10µF	20%	50V
2129	4822 124 40242	1µF	20%	63V
2130	4822 126 11585	22nF	20%	50V
2133	4822 124 40242	1µF	20%	63V
2138	4822 124 41576	2,2µF	20%	50V
2140	4822 121 51252	470nF	5%	63V
2144	4822 124 40242	1µF	20%	63V
2162	4822 124 41596	22µF	20%	50V

CHIP CAPACITORS

2108	4822 122 33515	82pF	5%	50V
2109	5322 122 31946	27pF	5%	50V
2120	5322 122 32659	33pF	5%	50V
2122	5322 126 10465	3,9nF	10%	63V
2127	4822 122 32927	220nF	10%	63V
2131	4822 122 33325	470nF	20%	50V
2132	4822 122 33325	470nF	20%	50V
2134	4822 122 33128	15nF	10%	63V
2135	4822 122 32927	220nF	10%	63V
2136	4822 122 33128	15nF	10%	63V
2137	4822 122 32927	220nF	10%	63V
2141	4822 122 31947	100nF	20%	50V
2142	4822 122 31947	100nF	20%	50V
2143	4822 122 32927	220nF	10%	63V
2145	4822 122 33575	220pF	5%	50V
2147	4822 122 33575	220pF	5%	50V

ELECTRICAL PARTSLIST TUNER 95 BOARD

CHIP CAPACITORS

2148	4822 122 33575	220pF	5%	50V
2150	4822 122 31947	100nF	20%	50V
2158	4822 122 31947	100nF	20%	50V
2160	4822 122 32139	12pF	5%	63V
2161	5322 122 34123	1nF	10%	50V

PHIL-05148

Midi System AS660C/41/34
AS665C/41/30

Service
Service
Service

Service Manual

TABLE OF CONTENTS

Location of printed circuit boards 1-2
Technical specification 2-1
Measurement setup 2-2
RC5-code 2-3
Instruction for use (exerpt) 2-4
Warnings & Safety 2-12

Service Hints 3-1
Dismantling instructions 3-2
Service Test Program 3-5

Block Diagram 4-1

Wiring Diagram 5-1

Front Board 6

Tuner Board: ECO5 .... 7B

Karaoke Board 8

Cassette board 9

CDC3 module 10

Power board 11

AF2 board 12

Exploded views and Mechanical partslist 13

Phono/AUX Board (For AS660C) 14A
Phono/AUX Board (For AS665C) 14B

Record Player Exploded views and partslist (For AS665C) 15

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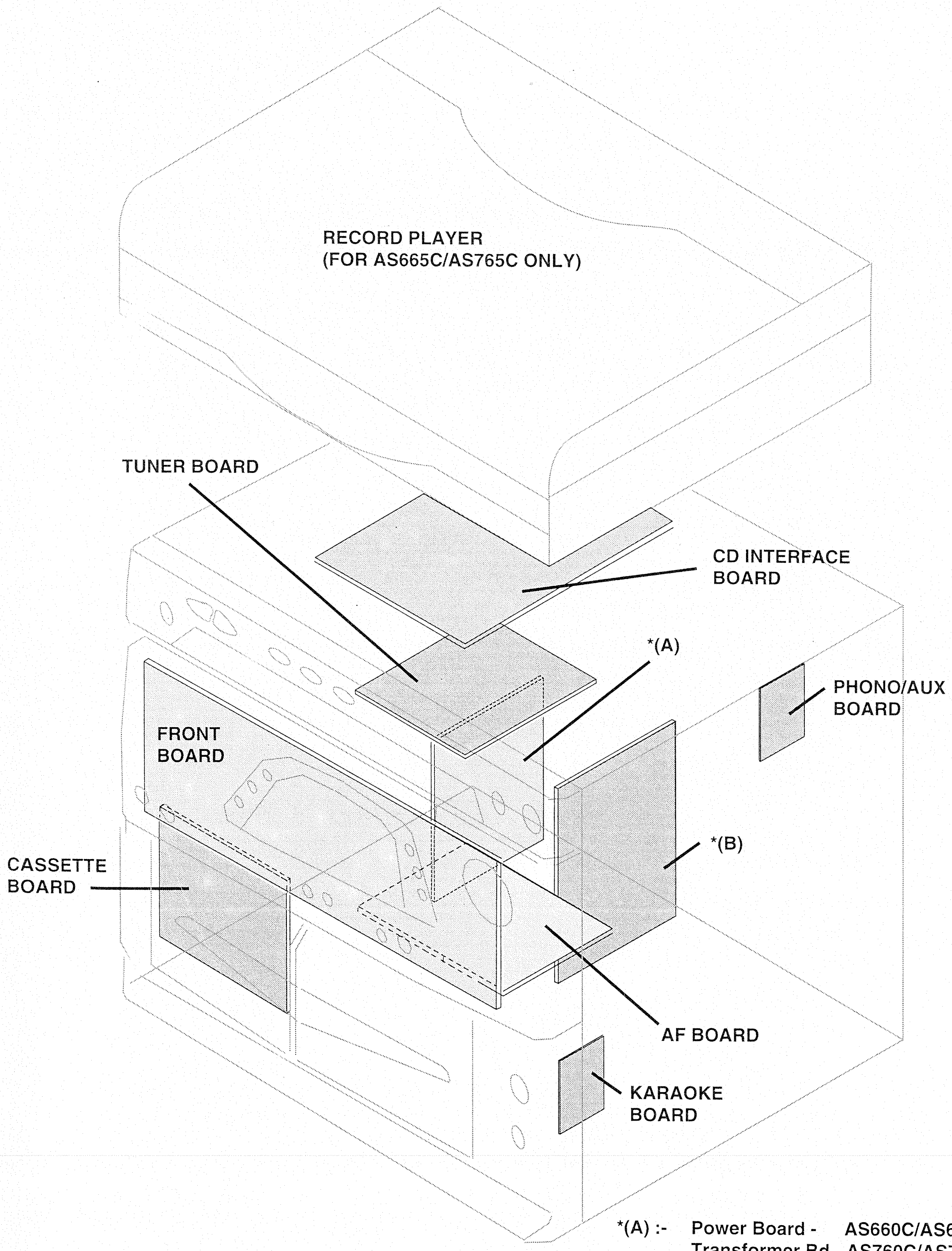
PCS 90 090

PHILIPS

5148

Location of printed circuit board


RECORD PLAYER
(FOR AS665C/AS765C ONLY)
TUNER BOARD
CD INTERFACE BOARD
*(A)
PHONO/AUX BOARD
FRONT BOARD
*(B)
CASSETTE BOARD
AF BOARD
KARAOKE BOARD

*(A) :- Power Board - AS660C/AS665C
Transformer Bd - AS760C/AS765C

*(B) :- Transformer Bd - AS660C/AS665C
Power Board - AS760C/AS765C

TECHNICAL SPECIFICATION

General:

Mains voltage	: 120V ~ 230V 230V (For AS660C/34) 240V (For AS665C/30)
Mains frequency	: 50/60 Hz
Power consumption	: 50 W max. @ 1/8Prated (For AS660C) 55Wmax.@1/8Prated(For AS665C) 130 W max. @ 1/10 Prated (For AS760C/AS765C)

Amplifier:

Output power	: 2 x 18W at 3Ω (For AS660C/ AS665C) 2 x 70W at 6Ω (For AS760C/ AS765C)
Headphone	: 3.5mm stereo jack
Frequency response	: 63Hz - 20kHz (-3dB) Limit
Dynamic bass boost	: +8dB ± 1dB at 100Hz
Input sensitivity	
Aux/Line	: 400mV ± 2dB
Microphone	: 2.5mV ± 2dB @1kHz
Phono	: 5mV ± 2dB

Tuner :

FM

Tuning range	: 87.5MHz - 108MHz
Grid	: 100kHz
IF	: 10.7MHz
Aerial input	: 300R click fit for /37
Sensitivity Mono 26dB S/N	: <20dB
Distortion at RF=1mV, △f=75kHz	: 3% (typ. 2%)
IF rejection	: > 60dB
Image rejection	: > 25 dB
-3dB Limiting Point	: < 23.5dBf

MW

Tuning range	: 530kHz - 1700kHz
Grid	: 10kHz
IF	: 450kHz ±1kHz
Sensitivity at 26dB S/N	: < 4.0mV/M
Distortion at RF=50mV, m=80%)	: < 5% (typ. 3%)
IF rejection	: > 45dB
Image rejection	: > 28dB

CD Unit:

Frequency response	: 20Hz - 20kHz at ±3dB
Signal/Noise ratio	: >80dB (A-weighted)
Channel unbalance	: <1dB
Channel separation at 1kHz	: >50dB
De-emphasis	: 0 or 15/50µS

Recorder Part:

Tape speed	: 4.76 cm/sec ± 2%
Wow and Flutter	: <0.4%
Fast-wind time C60	: 130sec
Bias system AM/FM	: AC 73kHz ± 5kHz
Distortion at 250nWb/m	: <5%
Channel difference at PB	: <3dB
Channel difference overall	: <3dB
Channel Separation	: >24dB at 1kHz
Track Separation	: >55dB at 1kHz
ALC attack time	: <300ms
ALC recovery time	: >10s
Frequency Response	: 80Hz - 12.5kHz within -8dB
Signal to noise ratio ①	: > 45dB
Siganl to Hiss ratio ②	: >45dB
Erase attenuation ③	: >55dB at 1kHz

① at 250 nW/m FF-weighted

② at 250 nW/m A-weighted

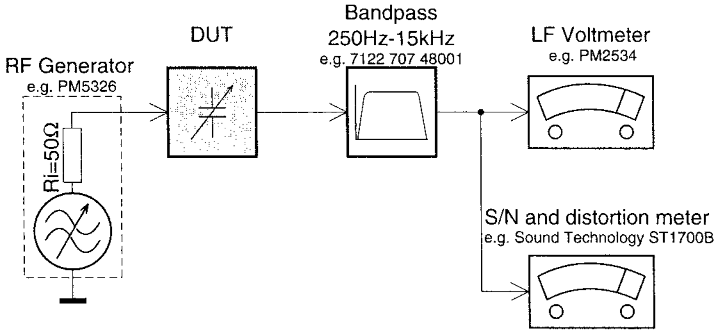
③ use a 1kHz passfilter to minimize the wide band noise component

Record Player:

Power Supply	: 12dc at 80mA
Wow & Flutter	: 0.25% JIS 0.35% DIN
Operating speed	: 33 1/3 - 45 rpm
Drive system	: Belt drive with auto return

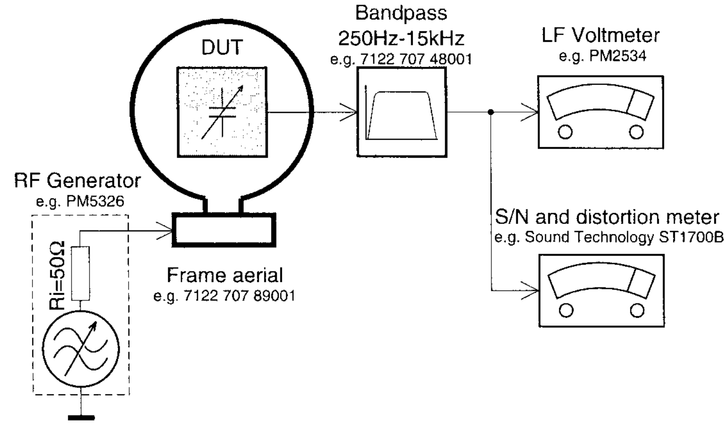
MEASUREMENT SETUP

Tuner FM


Bandpass
250Hz-15kHz
e.g. 7122 707 48001
DUT
LF Voltmeter
e.g. PM2534
RF Generator
e.g. PM5326
Ri=50Ω
S/N and distortion meter
e.g. Sound Technology ST1700B

Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

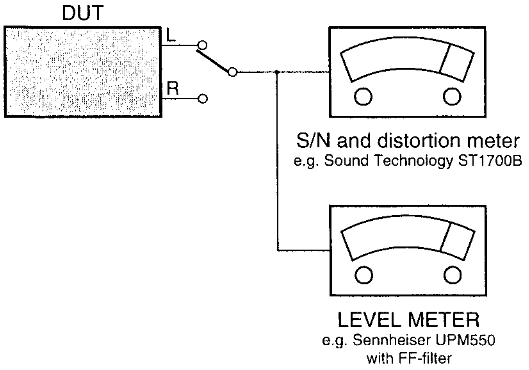
Tuner AM (MW,LW)


Bandpass
250Hz-15kHz
e.g. 7122 707 48001
DUT
LF Voltmeter
e.g. PM2534
RF Generator
e.g. PM5326
Ri=50Ω
S/N and distortion meter
e.g. Sound Technology ST1700B
Frame aerial
e.g. 7122 707 89001

To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

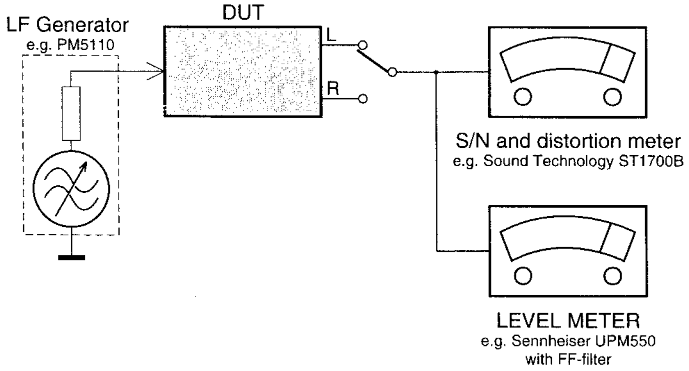
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)


DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

RECORDER

Use Universal Test Cassette **CrO_2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071


LF Generator
e.g. PM5110
DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

RC5 SYSTEM/COMMAND CODES

Remote control key	System Code	Command Code
Standby	17,18,20,21	12
Standby pressed longer than 1 sec	00,04,05	12
Tuner	17	63
Tuning up	17	30
Tuning down	17	31
Preset up	17	32
Preset down	17	33
Preset 10 key *	17	00-09
CD	20	63
CD Play	20	53
CD Stop	20	54
CD Pause	20	48
Preset 10 key *	20	00-09
CD Next	20	32
CD Previous	20	33
CD Search forward	20	52
CD Search backward	20	50
CD Disc Up	20	30
CD Disc Down	20	31
CD Shuffle	20	28
Tape	18	63
Tape1	18	44
Tape2	18	46
Side	18	47
Tape Play	18	53
Tape Stop	18	54
Tape Wind	18	52
Tape Rewind	18	50
Tape Pause	18	48
Tape Previous	18	33
Tape Next	18	32
Incredible Sound	16	64
DBB	16	70
DSC	16	79
Volume up	16	16
Volume down	16	17
Vocal Fader 1)	16	67
Key control up 1)	16	68
Key control down 1)	16	69
Mulitmedia	04	63
AUX	21	63

1) For set with KARAOKE only

* Only for set with the key available

Only applicable when TV/VCR function is available.

Remote control key	System Code	Command Code
TV/VCR	00	63
Channel down	00	32
Channel up	00	33
Play	00	53
Stop	00	54
Volume Down	00	17
Volume Up	00	16
Pause	05	48

Note: If key not available on the remote control, the code does not apply.

General Information/Safety Information

General Information

- The typeplate is located at the rear of the set.
- Recording is permissible if copyright or other rights of third parties are not infringed.

1 All unnecessary packaging material has been omitted. We have done our utmost to make the packaging easy to separate into three mono-materials:
  - cardboard (box)
  - expandable polystyrene (buffer)
  - polyethylene (bags, protective foam sheet).

  Please observe the local regulations regarding the disposal of these packaging materials.

2 Your set consists of materials which can be recycled and reused if disassembled by a specialized company. Please follow local regulations on recycling your old set.

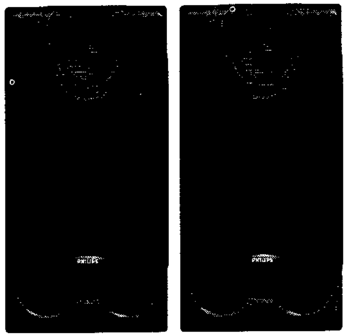
3 Do not dispose of dead batteries with your household waste. Dispose of batteries according to local regulations.

4 Note: Switching off the standby mode overnight (remove the AC power cord from the wall socket) will save energy.

Safety Information

- Before operating the system, check that the operating voltage indicated on the typeplate (or the voltage indication beside the voltage selector) of your system is identical with the voltage of your local power supply. If not, please consult your dealer. The type plate is located at the rear of your system.
- When the system is switched on, do not move it around.
- Place the system on a solid base (e.g. a cabinet).
- Place the system in a location with adequate ventilation to prevent internal heat build-up in your system.
- Do not expose the system to excessive moisture, rain, sand or heat sources.
- Under no circumstances should you repair the unit yourself, as this will invalidate the warranty!
- If the system is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens of the CD unit inside the system. Should this occur, the CD player will not operate normally. Leave the power on for about one hour with no disc in the unit until normal playback is possible.
- Electrostatic discharge may cause unexpected problems. See whether these problems disappear if you unplug the AC power cord and plug it in again after a few seconds.
- **To disconnect the system from the power supply completely, withdraw the AC power cord from the wall socket.**

Speakers



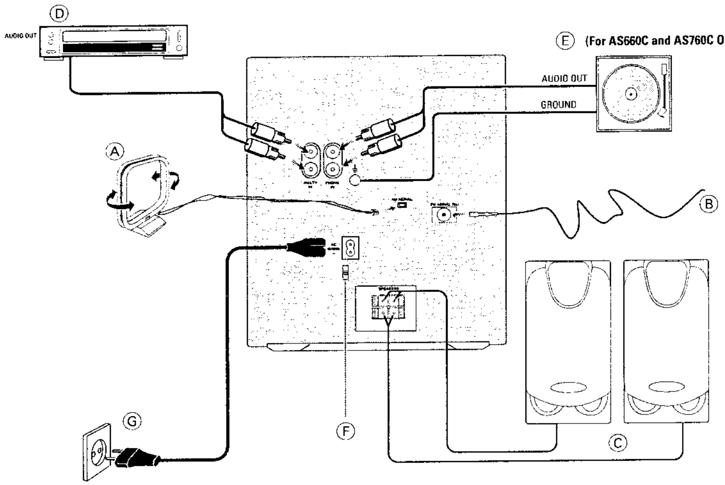
Accessories (Supplied)

- Remote control transmitter
- Batteries for remote control transmitter
- AM loop antenna
- FM antenna wire
- AC power cord

Inserting the batteries into the Remote Control

- Insert the batteries (Type R03, UM-4 or AAA for AS760C/AS765C and Type R6, UM-3 or AA for AS660C/AS665C) into the remote control transmitter as shown in the battery compartment.
- To avoid damage from possible battery leakage, remove the batteries if exhausted or unused for extended period. For replacement use only batteries of the type R03, UM-4 or AAA for AS760C/AS765C and type R6, UM-3 or AA for AS660C/AS665C.

Rear Connection



Ⓐ AM Antenna Connection

Connect the supplied loop antenna to the AM AERIAL terminal. Adjust the position of the AM loop antenna for the best reception.

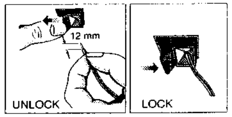
Ⓑ FM Wire Antenna Connection

Connect the supplied FM wire antenna to the FM 75 Ω terminal. Adjust the position of the FM antenna for the best reception.

Outdoor Antenna
For better FM stereo reception connect an outdoor FM antenna to the FM AERIAL 75 Ω terminal using a 75 Ω coaxial wire.

Ⓒ Speaker Connections

- Connect the right speaker to terminal **R**, with the red wire to + and the black wire to –.
- Connect the left speaker to terminal **L**, with the red wire to + and the black wire to –.
- Clip the stripped portion of the speaker wire as shown.



Ⓓ Connecting other equipment to your system

You can connect TV, Laser Disc or VCR audio left and right outputs to the AUX/TV IN terminal at the rear of the system.

Ⓔ Phono In (AS660C and AS760C only)

You can connect a record player with magnetic cartridge. The ground wire should be connected to the screw marked **GND**.

Ⓕ Adjusting the Operating Voltage

(for specific version only)

Before connecting the AC power cord to a wall outlet, make sure that the voltage selector at the rear of the system is set to the local power line voltage. If not, reset the selector before connecting to the wall outlet.

Ⓖ AC Power Supply

After all other connections have been made, connect the AC power socket to the set and the AC power plug to the wall outlet.

Front View

1 **POWER ON**
- to switch the set on or to standby mode.

2 **HIGH SPEED DUBBING**
- to dub from **TAPE DECK 2** to **TAPE DECK 1** at high speed.

3 **AUTO PROGRAM**
- to program preset stations automatically or manually.

4 **OPTIMAL**
- to select the sound setting that is tuned to the acoustics of the supplied speakers.

5 **BAND**
- to select the waveband : FM or MW.

6 **DIGITAL SOUND CONTROL (DSC)**
- to select the desired sound effect : JAZZ, ROCK, POP or CLASSIC.

7 **PRESET ▲ or ▼**
- to select a tuner station in memory. Also use for clock and timer setting.

8 **CD CAROUSEL TRAY**

9 **PROGRAM**
- to program CD tracks.

10 **⏮ PREV / NEXT ⏭ / SEARCH**
- to skip to the beginning of the current or previous/next track or to search backward/forward.

11 **3 CD DIRECT PLAY**
- to select play for each CD tray.

12 **STOP•CLEAR ■**
- to stop CD play or to clear a program.

13 **PLAY•PAUSE ►II**
- to start or interrupt CD play.

14 **OPEN•CLOSE ⏏**
- to open or close the CD carousel tray.

15 **SHUFFLE**
- to play all the available discs and their tracks in random order.

16 **DISPLAY**
- to display the current setting of the set.

17 **CLOCK**
- to set the clock.

18 **DEMO**
- to display the various features offered by the system.

19 **VOLUME**
- to adjust the volume level.

20 **TIMER SET**
- to set the timer.

21 **TIMER ON•OFF**
- to switch the timer on or off.

22 **DYNAMIC BASS BOOST (DBB)**
- to switch on bass boost to enhance bass response or to switch off bass boost.

23 **INCREDIBLE SOUND**
- to select the pseudo surround spatial sound effect.

24 **PHONES 🎧**
- to connect headphones (ø3.5mm) jack.

25 **TUNING ⏮ or ⏭**
- to tune to tuner stations
  - ⏮ : lower frequencies.
  - ⏭ : higher frequencies.

Also use for clock and timer setting.

26 **SOURCE**
- to select the following :

TUNER : to switch to Tuner mode.
CD : to switch to CD mode.
TAPE : to switch to Tape mode.
PHONO•AUX : to switch to PHONO•AUX mode (for external sources, e.g. TV, Laser Disc, VCR sound or Record Player).

27 **MIC LEVEL**
- To adjust the mixing level for karaoke or microphone recording.

28 **MICROPHONE 🎤**
- Connection for microphone.

29 **TAPE DECK 2**

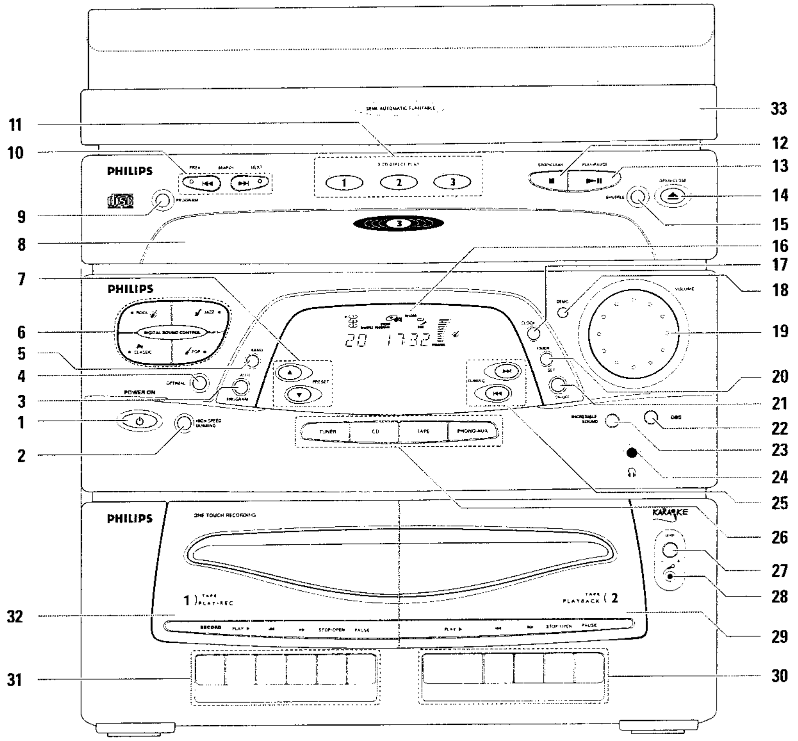
30 **TAPE 2 CASSETTE OPERATION**
- **PLAY ►** : to start playback.
- **REW ◄◄** : to rewind the cassette.
- **F.FWD ►►** : to fast forward the cassette.
- **STOP•OPEN** : to stop playback or to open the cassette compartment.
- **PAUSE** : to interrupt playback.

31 **TAPE 1 CASSETTE OPERATION**
- **RECORD** : to start recording.
- **PLAY ►** : to start playback.
- **REW ◄◄** : to rewind the cassette.
- **F.FWD ►►** : to fast forward the cassette.
- **STOP•OPEN** : to stop playback or to open the cassette compartment.
- **PAUSE** : to interrupt playback or recording.

32 **TAPE DECK 1**

33 **RECORD PLAYER FOR AS665C AND AS765C ONLY**

Front View



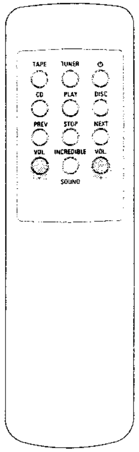
Remote Control

Remote Control Functions

- First select the source you wish to control by pressing one of the source select keys on the remote control (eg. TUNER, CD or TAPE).
- Then select the desired function (PLAY, NEXT, etc.).

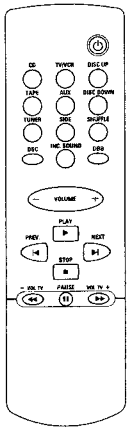
Notes:
- Whenever a remote control button is pressed, the source icon on the set display will flicker. This indicates the remote control signal is received by the set.
- For TV/VCR operation, the TV or VCR must use the RC-5 code remote control system.
- Press TV/VCR for more than 1 second to switch on the TV/VCR from the standby mode and also to select PHONO•AUX mode.

For Models AS660C and AS665C only



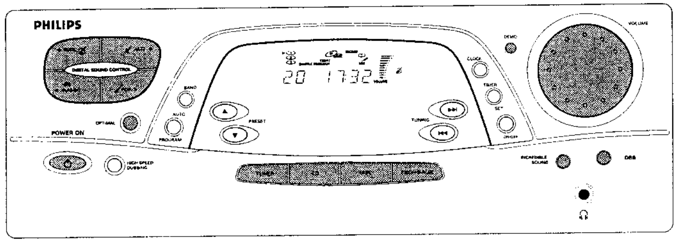
⏻	to switch the unit to standby mode.
TUNER	to select TUNER mode.
TAPE	to select TAPE mode.
CD	to select CD mode.
PLAY	to start play in CD mode.
DISC	to select and play the desired disc.
PREV/ NEXT	
for TUNER	to select a lower/higher tuner preset station.
for CD	to select previous/next CD track.
STOP	to stop play in CD mode.
VOLUME +/–	to adjust the volume.
INCREDIBLE SOUND	to switch on or off the spatial surround sound effect.

For Models AS760C and AS765C only



⏻	to switch the unit to standby mode.
CD	to select CD mode.
TV/VCR	to select TV/VCR and PHONO•AUX mode.
DISC UP/DOWN	to select desired disc.
TAPE	to select TAPE mode.
AUX	to select PHONO•AUX mode.
TUNER	to select TUNER mode.
SIDE	not functional for this model.
SHUFFLE	to play CD tracks at random.
DSC	to select digital sound control: OPTIMAL, JAZZ, CLASSIC, ROCK or POP.
INCREDIBLE SOUND	to switch on or off the spatial surround sound effect.
DBB	to switch on or off dynamic bass boost.
VOLUME +/–	to adjust the volume.
PLAY	to start play in CD mode.
STOP	to stop play in CD mode.
⏮ PREV. / NEXT ⏭	
for TUNER	to select a lower/higher tuner preset station.
for CD	to select previous/next CD track.
for TV/VCR	to select previous/next channel.
PAUSE ⏸	to interrupt play in CD mode.
◀◀ / ▶▶	
for TUNER	to tune to a lower/higher frequency.
for CD	to search a particular passage.
TV VOLUME +/–	to adjust the TV (RC 5 code) volume.

Operating the System



Important :
Before you begin operating the system, complete the preparation procedures. The set is in the standby mode when the AC power plug is connected to the wall socket and "0:00" flashes on the display.

Switching the system ON

- Press **POWER ON** or **TUNER**, **CD**, **TAPE** or **PHONO•AUX** (or **CD**, **TUNER** or **TAPE** on the remote control).

Switching the system to standby mode

- Press **POWER ON** again (or ⏻ on the remote control).

Selecting the Sound Source

- Press one of the source buttons to select either **TUNER**, **CD**, **TAPE** or **PHONO•AUX** (or **CD**, **TUNER** or **TAPE** on the remote control).
  → The display indicates the selected sound source.

You can also select the sound source directly by selecting the respective **PLAY** button for CD mode or the **PRESET**, **BAND** or **TUNING** button for TUNER mode.

Important! (for models AS660C and AS760C only)
If you select the PHONO•AUX mode and both the PHONO-IN and TV/AUX IN are connected, do not play both the record player or TV/VCR at the same time! If not, both the audio sound will be heard. You are advised to play only one external source at any one time.

Volume Adjustment

Turn **VOLUME** right or left (or press + or – on the remote control) to increase or decrease the sound level.

For Personal Listening
Connect the headphones to the 🎧 socket (ø3.5 mm). The speakers will be muted.

Digital Sound Control (DSC)

- To enjoy a special sound effect, press **JAZZ** (♪), **CLASSIC** (♪), **ROCK** (♪) or **POP** (♪).

Optimal Sound

- Press **OPTIMAL** to hear the sound setting that is tuned to the acoustics of the supplied speakers.

Dynamic Bass Boost (DBB)

- Press **DBB** to enhance the bass response.
  → The DBB flag lights up.
  The button lights up when the DBB feature is switched on.

Incredible Sound

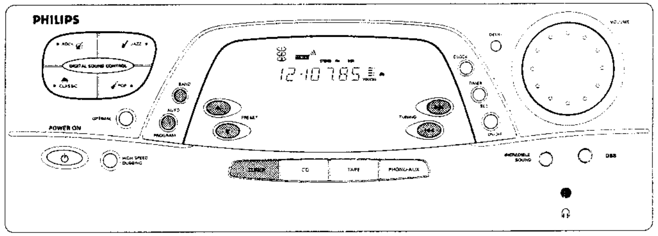
- In addition to all other sound settings, you can activate the spatial surround sound feature by pressing **INCREDIBLE SOUND**.
  → This creates a phenomenal surround sound effect even if the speakers are positioned close to the system.
  The sound becomes "incredibly" spatial.
  The button lights up when the incredible sound feature is switched on.

Demo mode

The system has a demonstration mode that shows the various features offered by the system.

- Press **DEMO** to switch on the demonstration.
  → The display will show "WELCOME TO THE AUDIO WORLD", then a demonstration of the various features will follow.
- Press **DEMO** again or **POWER ON** to stop the demonstration mode.

Tuner



Tuning to radio stations

1 Press **TUNER**.
2 Press **BAND** to select the desired waveband : FM or MW.
3 Press **TUNING** I◀◀ or ▶▶I for more than one second.
   → The display will show 'SEARCH' until a station with sufficient signal strength is found.

- Repeat this procedure until the desired station is reached.
- To tune to a weak station, briefly press **TUNING** I◀◀ or ▶▶I until the display shows the right frequency and/or when the best reception has been obtained.

Storing Preset Stations

You can store up to 20 stations in the memory. When a preset station is selected, the preset number appears next to the frequency on the display.

Automatic programming

1 Press **BAND** to select the desired waveband : FM or MW.
2 Press **AUTO PROGRAM** for more than 1 second to start the automatic programming.
   → PROGRAM flashes and 'AUTO' is displayed.
   → Every available station will be stored automatically. The frequency and preset number will be displayed briefly.
   → It will stop searching when all the available stations are stored or the memory for 20 preset stations is used.

- You can cancel the automatic programming by pressing **AUTO PROGRAM**, **TUNING** I◀◀ or ▶▶I , **PRESET** ▼ or ▲ or **BAND**.

Note:
If you want to maintain some old preset numbers, for example preset number 1 - 9, select preset 10 before starting automatic programming: now only the preset numbers 10 to 20 will be programmed.

Manual programming

1 Press **AUTO PROGRAM** for less than 1 second.
   → PROGRAM flashes on the display.
2 Press **BAND** to select the desired waveband : FM or MW.
3 Press **TUNING** I◀◀ or ▶▶I to tune to the desired frequency.
4 Press **PRESET** ▼ or ▲ to select a preset number.
5 Press **AUTO PROGRAM** again.
   → PROGRAM disappears, and the station is stored.

- Repeat the above procedure to store other preset stations.

Tuning to Preset Stations

- Press **PRESET** ▼ or ▲ (or **PREV** or **NEXT** on the remote control) to select the desired preset number.
   → The preset number, frequency and waveband appear on the display.

Changing the FM/MW tuning grid

(for specific version only)

The frequency step can be changed if necessary. In North and South America, the frequency step between adjacent channels in the FM/MW band is 100 kHz/10 kHz. In other parts of the world, it is 50 kHz/9 kHz. Usually the frequency step has been preset in the factory for your area.

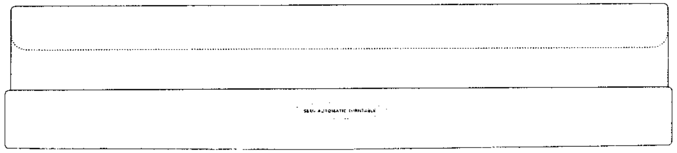
For FM Band : change from 50kHz to 100kHz or vice versa
For MW Band : change from 9kHz to 10kHz or vice versa

Changing of tuning grid will erase all previously stored preset stations.

1 Switch the unit to standby mode and disconnect the unit from the AC power supply (pull out the AC power cord).
2 Keep **AUTO PROGRAM** and **TUNING** ▶▶I depressed, while re-connecting the system to the AC power supply again.
   → Display briefly shows "TUNER" and then followed "GRID 9" or "GRID 10".

Note:
GRID 9 indicates that the tuning grid is in step of 50kHz in FM band and 9kHz in MW band. GRID 10 indicates that the tuning grid is in step of 100kHz in FM band and 10kHz in MW band.

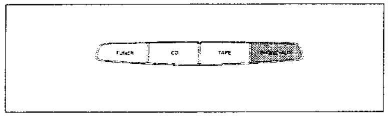
Record Player (AS665C and AS765C only)

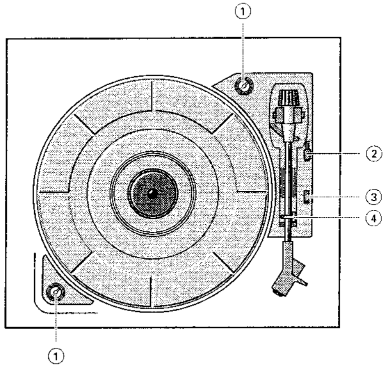


Record Player Controls

① Transport safety screws.
② Pick up arm lever for raising and lowering the pick up arm.
③ RPM selector for selecting the appropriate speed at 33 or 45 rpm.
④ Pick up arm lever clamp.

Note:
Preparation for use
Fully tighten both record player transport safety screws. Screw in clockwise direction.

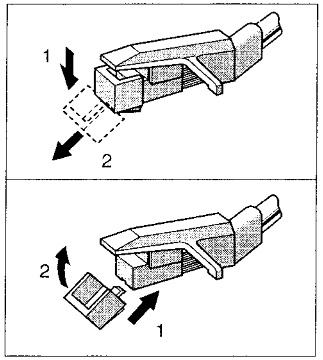


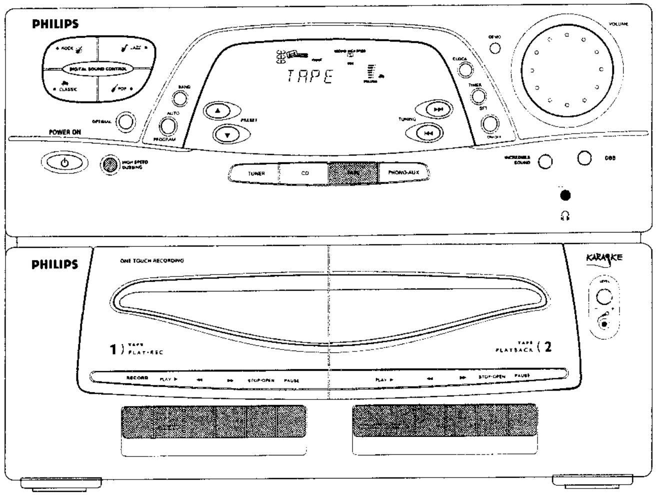


Record Player Operation

1 Press **PHONO•AUX**.
2 Place a record on the turntable.
3 Remove the stylus guard by gently pulling it forward.
4 Set the appropriate speed - 33 or 45 - on the rpm selector.
5 Release the pickup arm from its clamp.
6 Set the lever to ▼ (UP).
7 Move the pickup arm inwards. This starts the record player. Then position the arm above the desired track or passage on the record.
8 Move the lever carefully to the ▼ (DOWN) position. Playback of the record begins.
9 At the end of the record the pickup arm returns to its support and the record player is automatically switched off.
10 Record playback can be stopped at any given time by setting the lever to the ▼ (UP) position and then moving the pickup arm outwards.
When the pickup arm reaches the support, the turntable will stop. The lever can now be set to the ▼ (DOWN) position, the arm secured and the stylus guard replaced.

Notes:
1. At first it is possible that the pickup arm will not return to its support. If this happens, move the pickup arm by hand - gently! - to the centre of the record. Once the mechanism has been actuated in this way, it will subsequently operate automatically.
2. To change needle gently pull it down and take it out (see figure). Replace the needle with same model by pushing to the original place. The "click" indicates that the new needle is fixed.





Loading a cassette

- Press **STOP•OPEN**.
- The cassette compartment door opens.
- Load the cassette with the open side downward and the full spool to the left.
- Close the cassette compartment door.

Tape Playback

1 Press **TAPE**.
2 Load the cassette into a **CASSETTE DECK**.
3 Press **PLAY ▶** to start playback.
4 Press **STOP•OPEN** to end playback.

Fast Forward/Rewinding

1 You can rewind or fast forward the tape by pressing ◀◀ or ▶▶.
2 Press **STOP•OPEN** to stop fast forwarding or rewinding.

Note:
It is possible to fast forward or rewind a cassette when the set is in another source mode (e.g. TUNER, CD or PHONO•AUX mode).

Continuous playback of two cassettes

1 Press **TAPE**.
2 Load the cassettes in **TAPE DECK 1** and **TAPE DECK 2**.
3 Press **PLAY ▶** on **TAPE DECK 2**.
4 Press **PAUSE** on **TAPE DECK 1**.
5 Press **PLAY ▶** on **TAPE DECK 1**.
→ Playback will begin with **TAPE DECK 2** and will continue with **TAPE DECK 1** when **TAPE DECK 2** ends.
6 Press **STOP•OPEN** if you want to stop playback before the end of the tape in **TAPE DECK 1** or **TAPE DECK 2**.

Recording (TAPE DECK 1)

1 Press **TUNER**, **CD** or **PHONO•AUX**.
2 Load a blank cassette into **TAPE DECK 1**.
3 Press **RECORD** on **TAPE DECK 1** to start recording.
→ The RECORD flag starts flashing.
4 Press **STOP•OPEN** on **TAPE DECK 1** to stop recording.

Note:
During recording, it is not possible to listen to another sound source

Dubbing cassettes (from DECK 2 to DECK 1)

1 Load the pre-recorded cassette into **TAPE DECK 2** and a blank cassette into **TAPE DECK 1**.
→ Make sure that both cassettes have their full spools to the left.
- For high speed recording, press **HIGH SPEED DUBBING**.
→ HIGH SPEED appears on the display.

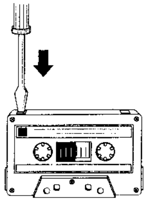
HIGH SPEED DUBBING

2 Press **PAUSE** on **TAPE DECK 1**.
3 Press **RECORD** on **TAPE DECK 1**.
→ RECORD appears on the display.
4 Press **PLAY ▶** on **TAPE DECK 2**.
→ Recording will start automatically.
5 Press **STOP•OPEN** on **TAPE DECK 1** and **TAPE DECK 2** to stop dubbing.

Notes:
- At the end of side A, flip the cassettes to side B and repeat the procedure.
- Dubbing of cassettes is only possible in the TAPE mode. To ensure good dubbing, use tapes of the same length.
- During high speed dubbing in Tape mode, the sound is reduced to a low volume.

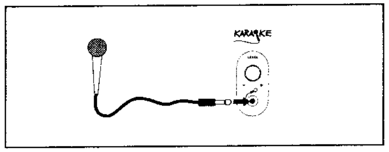
General Information

- For recording, use only a cassette of IEC type I (normal cassette).
- The tape in the cassette is secured at both ends with leader tape. At the beginning and end of a cassette, nothing will be recorded for six to seven seconds.
- The recording level is set automatically, regardless of the position of VOLUME.
- Check and tighten slack tape with a pencil before use. Slack tape may get jammed or may burst in the mechanism.
- To prevent accidental recording, break out the tab on the left shoulder of the cassette side. To re-record the cassette, cover each hole with cellophane tape.



- C-120 tape is extremely thin and may be easily deformed or damaged. It is not recommended for use in this unit.
- Store the cassettes at room temperature and do not put them too close to a magnetic field (for example, transformers, TVs or speakers).

Karaoke



Microphone mixing

1 Connect the microphone to the mic socket.
2 Press **CD**, **TUNER**, **TAPE** or **PHONO•AUX**.
3 Play the selected source.
4 Adjust the volume with **VOLUME** control.
5 Adjust the **MIC LEVEL** control to the mixing level that you want.
6 Start singing or talking through the microphone.

Note:
- To prevent acoustics feedback (for example, a loud howling sound), adjust the MIC LEVEL control to the minimum before you plug in the microphone.

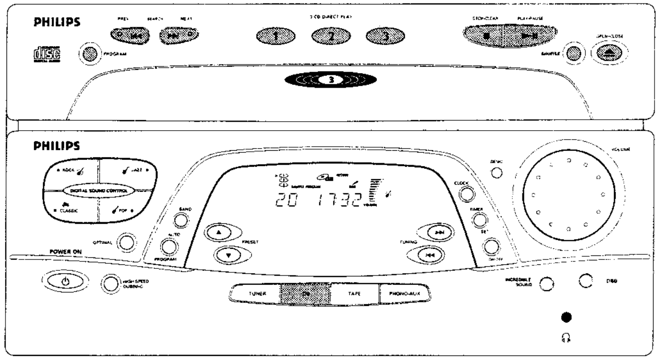
Recording the mixed sound

During microphone mixing, you can record the mixed sound on a cassette in DECK 1.

1 Load a blank cassette in **DECK 1**.
2 Press **RECORD**.

Notes:
- If you do not intend to record via the microphone, unplug the microphone to avoid accidental mixing with other recording source.
- It is not possible to record the mixed sound through a microphone during cassette Dubbing mode.

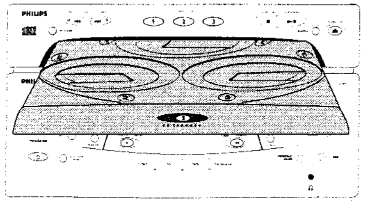
CD Changer



Warning!
1) This set is designed for conventional CDs. Do not use any accessories like disc stabilizer rings or CD treatment sheets, etc, which may damage the CD mechanism.
2) Do not load more than one disc into each tray.
3) When the CD changer is loaded with CD(s), do not turn over or shake the unit as this may jam the changer mechanism.

You can load up to three discs in the CD changer for continuous play without interruption. You can see the display of the selected or current disc on the display panel.
In addition to the conventional 12-cm disc, 8-cm discs can also be used without an adaptor.

Loading the CD Changer



1 Press **CD**.
2 Press **OPEN•CLOSE ▲**.
→ The CD compartment slides out.
3 Load a disc with the ***printed side up*** in the right tray.
- You can load another disc in the left tray.
- To load the third disc, press the corresponding **3 CD DIRECT PLAY** button of the empty tray.
→ The CD changer carousel will rotate until the empty tray is at the right hand side and is ready for loading.
→ Playback will always start with the outer right disc tray.

4 Press **OPEN•CLOSE ▲** to close the CD compartment.
→ The total number of tracks and playing time of the last selected disc appear on the display.

The following display indications will help you to know whether the disc trays are empty or loaded.

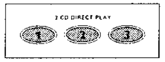
1 – indicates the disc tray is empty.
(2) – indicates the disc tray is loaded with a disc.
►(3) – indicates the current or selected disc tray.

Playing a Disc

1 Press **PLAY•PAUSE ►II** (or **PLAY** on the remote control) to start playback.
→ The disc tray, track number and elapsed playing time of the current track appear on the display.
- To interrupt play, press **PLAY•PAUSE ►II**.
→ The playing time flashes.
- To resume play, press **PLAY•PAUSE ►II** again (or **PLAY** on the remote control).

2 To stop play, press **STOP•CLEAR ■** (or **STOP** on the remote control).

Note:
If no action is performed during playback, all the available discs will play once and then stop. When the CD has stopped playing, the set will switch to the standby mode after 15 minutes if no button is pressed.



When the CD tray is closed, you can also play a CD directly by pressing the **3 CD DIRECT PLAY (1 – 3)** buttons. The CD player will stop at the end of playback of the selected disc.

Selecting a desired track

Selecting a desired track at the stop mode
1 Press **I◄◄ PREV** or **NEXT ►►I** (**PREV** or **NEXT** on the remote control) until the desired track appears on the display.
2 Press **PLAY•PAUSE ►II** (or **PLAY** on the remote control) to start playback.
→ The selected track number and elapsed playing time appear on the display.

Selecting a desired track during play mode
1 Press **I◄◄ PREV** or **NEXT ►►I** (**PREV** or **NEXT** on the remote control) until the desired track appears on the display.
→ The selected track number and elapsed playing time appear on the display.
- If you press **I◄◄ PREV** once it will skip to the beginning of the current track and play the track again.

Searching for a particular passage during play

- Press and hold **SEARCH I◄◄** or **►►I** until the desired passage is located. During the search, the sound is played faster than normal at a reduced volume. Play returns to normal when **SEARCH I◄◄** or **►►I** is released.

Shuffle

(also on models AS760C and AS765C remote control only)

SHUFFLE – playing all the available discs and their tracks in random order. It can also be used during program mode.

To shuffle all the discs and tracks
1 Press **SHUFFLE**.
→ "SHUFFLE" flashes briefly on the display.
→ The SHUFFLE flag, the disc and the track selected at random appear on the display.
- The discs and the tracks will now be played in random order until you press **STOP•CLEAR ■**.

2 Press **SHUFFLE** again to resume normal play.
– The SHUFFLE flag disappears from the display.

Programming Tracks

Programming tracks of a loaded CD is possible in the stop mode of the CD. Reviewing of a program is only possible in stop mode. The display will indicate the total tracks stored in the program. Up to 40 tracks can be stored in the memory in any order. When 40 tracks are stored and you attempt to store another track, the display will show "PROGRAM FULL".

1 Load the desired discs in the disc trays.
2 Press **PROGRAM** to start programming.
→ The PROGRAM flag flashes on the display.
3 Press the desired disc button to select the disc.
4 Press **I◄◄ PREV** or **NEXT ►►I** to select the desired track.
5 Press **PROGRAM** to store the track.
- Repeat steps **3** to **5** to store other discs and tracks.

6 Press **STOP•CLEAR ■** once to end programming mode.
→ The total number of tracks programmed and total playing time appear on the display.

Playing the program
1 Press **PLAY•PAUSE ►II** (or **PLAY** on the remote control) to start program playback.
– The track number and elapsed playing time of the current track appear on the display.
2 Press **STOP•CLEAR ■** (or **STOP** on the remote control) to stop program playback.

Note:
If you press any of the 3 CD DIRECT PLAY buttons, the set will play the selected disc, the stored program will be ignored temporary. The PROGRAM flag will also temporarily disappear from the display and then reappear when the playback for the selected disc ends.

Reviewing the program
Reviewing the program is only possible in the stop mode.
- Press **I◄◄ PREV** or **NEXT ►►I** repeatedly to review the programmed tracks.

Erasing the program (in the stop position)
- Press **STOP•CLEAR ■**
→ "PROGRAM CLEARED" appears on the display.

Note:
The program is also erased when the set is disconnected from the power supply. If the CD carousel is opened, only the outer two trays will be erased and the display will show "CLEARED".

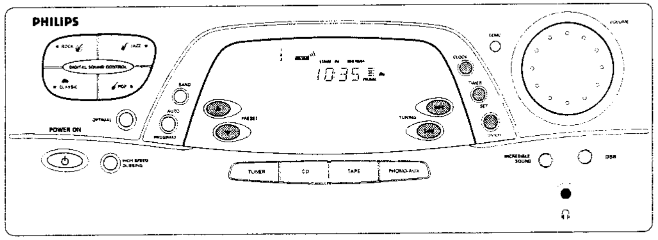
CD Recording

During CD recording
- It is not advisable to fast forward/rewind your cassette in TAPE DECK 2.
- It is not possible to listen to another sound source.

CD Recording
1 Load a blank cassette (full spool to the left) into **DECK 1**.
2 Press **CD**.
3 Load a disc into the disc tray.
4 Press **I◄◄ PREV** or **NEXT ►►I** to select the desired track. If desired, you can program the tracks in the order you want them to be recorded (see Programming Tracks).
5 Press **RECORD** on **TAPE DECK 1** to start recording.
→ The RECORD flag flashes on the display.
→ CD starts playing.
6 Press **STOP•CLEAR ■** on CD and **STOP•OPEN** on **TAPE DECK 1** to stop recording.

Clock Setting

Timer Setting



Setting the clock

The clock will display in 24-hour mode, e.g. 00:00 or 23:59.

1 Press **CLOCK**.
→ "00:00" starts flashing.
2 Set the hour with **PRESET ▼** or **▲**.
3 Set the minute with **TUNING** **I◀◀** or **▶▶I** .
4 Press **CLOCK** again to store the setting.
→ The clock starts running.

Note:
– When a power interruption occurs, the clock settings are erased, and "0:00" will flash on the display.

Setting the Timer

- The system can switch on to TUNER or CD mode automatically at a preset time. It can serve as an alarm to wake you up. After half an hour from the preset time, the system will return to the standby mode.
- Before setting the timer, make sure the clock is set correctly.
- The timer works only once for each setting.
- **The volume of the timer will be at the last setting before the set is switched to Standby mode.**

Timer Setting

1 Press **TIMER SET**.
→ The TIMER flag flashes.
2 Press **PRESET** **▲** to select the desired source.
→ The display will switch as follows:
TUNER → CD → TUNER ...
3 Press **TIMER SET** to confirm your source selection.
→ The display will show "ON 00:00" and "00:00" flashes.
4 Press **PRESET ▼** or **▲** to set the hour for the timer to start.
5 Press **TUNING** **I◀◀** or **▶▶I** to set the minutes for the timer to start.
6 Press **TIMER SET** to store the start time.
→ The TIMER is now set.
→ The TIMER flag remains lit.

To stop the TIMER
- Press **TIMER ON•OFF** on the set.
→ The TIMER is now off.

To start the TIMER again
- Press **TIMER ON•OFF** on the set.
→ The display will show the last set start time of the TIMER and its flag.
→ The TIMER flag remains lit.

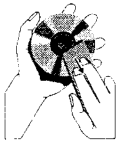
Notes:
1. If the source selected is TUNER, the last tuned frequency will be switched on.
2. If the source selected is CD, the first track of the last selected disc will be played. If the CD trays are empty, the TUNER source will be selected instead.

Maintenance

Maintenance

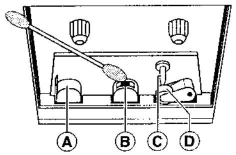
Cleaning the Cabinet
- Use a soft cloth slightly moistened with a mild detergent solution. Do not use a solution containing alcohol, spirits, ammonia or abrasives.

Cleaning Discs
- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.



- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog records.

Cleaning the Heads and the Tape Paths
- To ensure good recording and playback quality, clean the heads Ⓐ and Ⓑ, the capstan Ⓒ, and pressure roller Ⓓ after every 50 hours of tape operation.



- Use a cotton swab slightly moistened with cleaning fluid or alcohol.

Demagnetizing the heads
- Use a demagnetizing cassette available at your dealer.

Troubleshooting Guide

Warning! Under no circumstances should you try to repair the set yourself, as this will invalidate the warranty.

- If a fault occurs, check the points listed below before taking the set for repair.
- Should any problems persist after you have made these checks, consult your nearest dealer or service center.

Symptom	Cause	Remedy
Radio Reception		
The STEREO indicator flashes.	The signal is too weak.	Adjust the antenna.
Severe hum or noise.	The signal strength is too weak. The TV or VCR is too close to the stereo system.	Adjust the antenna. Separate the stereo system from the TV or VCR. Connect an external antenna for better reception.
Cassette Deck Operation		
Recording is not possible.	No cassette in the cassette deck. The protection tab has been broken.	Insert a blank cassette into the cassette deck. Put a piece of clear adhesive tape over the opening.
Recording or playback cannot be made or there is a decrease in audio level.	Dirty tape heads. Magnetic build-up in the record/playback head.	See section on cassette deck maintenance. Use demagnetizing cassette.
Excessive wow or flutter, or sound drop-out.	Contamination of the capstans or pressure rollers.	See section on cassette deck maintenance.
CD Player Operation		
"NO DISC" is displayed.	The disc is inserted upside down. Moisture condensation. There is no disc in the selected CD tray. The CD is dirty, badly scratched or warped.	Place CD with printed side up. Wait until lens has adjusted to normal room temperature. Insert a CD. Replace or clean the CD.
Record Player (AS665C and AS765C only)		
No sound.	PHONO source is not selected.	Press the PHONO•AUX key.
Bad sound.	Needle is dirty.	Clean or change the needle.
Pickup arm jumps out of the groove.	The record player is not positioned on a level surface.	Position the record player on a level surface.
General		
Set not working.	Set does not react when buttons are pressed.	Press POWER ON to switch the unit off, then switch it on again. Or, unplug the AC power plug from the wall outlet, then plug it in again.
No or poor sound.	Volume is not turned up. The headphones are connected. Speakers are not connected or are connected wrongly.	Turn VOLUME clockwise. Disconnect the headphones. Check that the speakers are connected correctly. Make sure that the stripped speaker wire is clamped.
Reversed left and right sound.	Speakers are connected wrongly.	Check the speaker connections and speaker location.
Lack of bass sound or apparently imprecise physical location of musical instruments.	Speakers are connected wrongly.	Check the speaker connection for proper phasing, red/black wires to red/black terminals.
Clock blinking.	There was a power out.	Reset the clock.
Remote control has no effect on the set.	The distance to the system is too large. Batteries are inserted incorrectly. Batteries are dead. Wrong sound source is selected.	Reduce the distance. Insert the batteries correctly. Replace the batteries. Select the sound source before pressing the function button, (PLAY, NEXT, PREV, etc.)
Timer not working	Timer not on. Dubbing/recording is active.	Press TIMER ON•OFF on the set to switch on the timer.
"PRESS DEMO TO EXIT" is displayed.	Demo mode is switched on.	Press POWER ON or DEMO to switch off demo mode.

Warnings & Safety

ESD

(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

(F) ATTENTION

Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) WAARSCHUWING

Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderm. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delàpparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SAFETY

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
Safety components are marked by the symbol ⚠

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(I)
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠

(F)
Les normes de sécurité exigent que l´appareil soit remis à l´état d´origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
Les composants de sécurité sont marqués ⚠

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(FIN) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen !

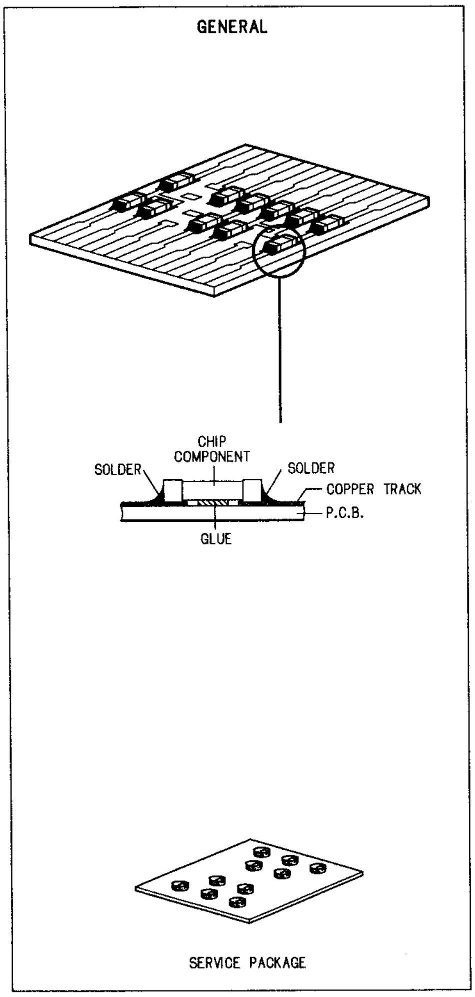
(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

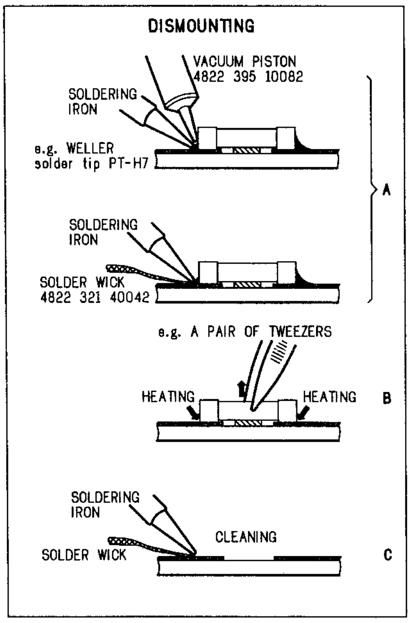
SERVICE HINTS

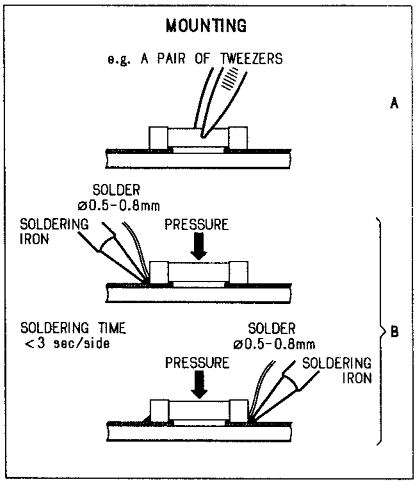
Service Tools

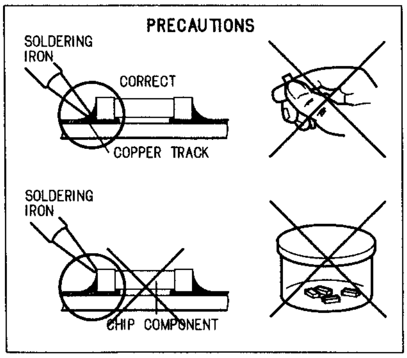
TORX screwdriver set SBC 163	4822 295 50145
Audio signal disc SBC 429	4822 397 30184
Test disc 5 (disc without errors) + **Test disc 5A** (disc with dropout errors, black spots and fingerprints) SBC 426/426A	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30dB level without "pause")	4822 397 30155
Universal test cassette Fe SBC 420	4822 397 30071
Universal test cassette CrO2 SBC 419	4822 397 30069

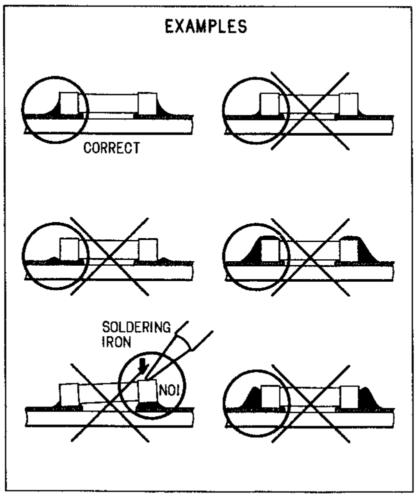
Handling Chip Components


GENERAL
CHIP
COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE


DISMOUNTING
VACUUM PISTON
4822 395 10082
SOLDERING
IRON
e.g. WELLER
solder tip PT-H7
A
SOLDERING
IRON
SOLDER WICK
4822 321 40042
e.g. A PAIR OF TWEEZERS
HEATING
HEATING
B
SOLDERING
IRON
CLEANING
SOLDER WICK
C


MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER
ø0.5-0.8mm
SOLDERING
IRON
PRESSURE
SOLDERING TIME
<3 sec/side
SOLDER
ø0.5-0.8mm
PRESSURE
SOLDERING
IRON
B


PRECAUTIONS
SOLDERING
IRON
CORRECT
COPPER TRACK
SOLDERING
IRON
CHIP COMPONENT


EXAMPLES
CORRECT
SOLDERING
IRON
NO!

DISMANTLING INSTRUCTIONS

Dismantling of Cassette flap

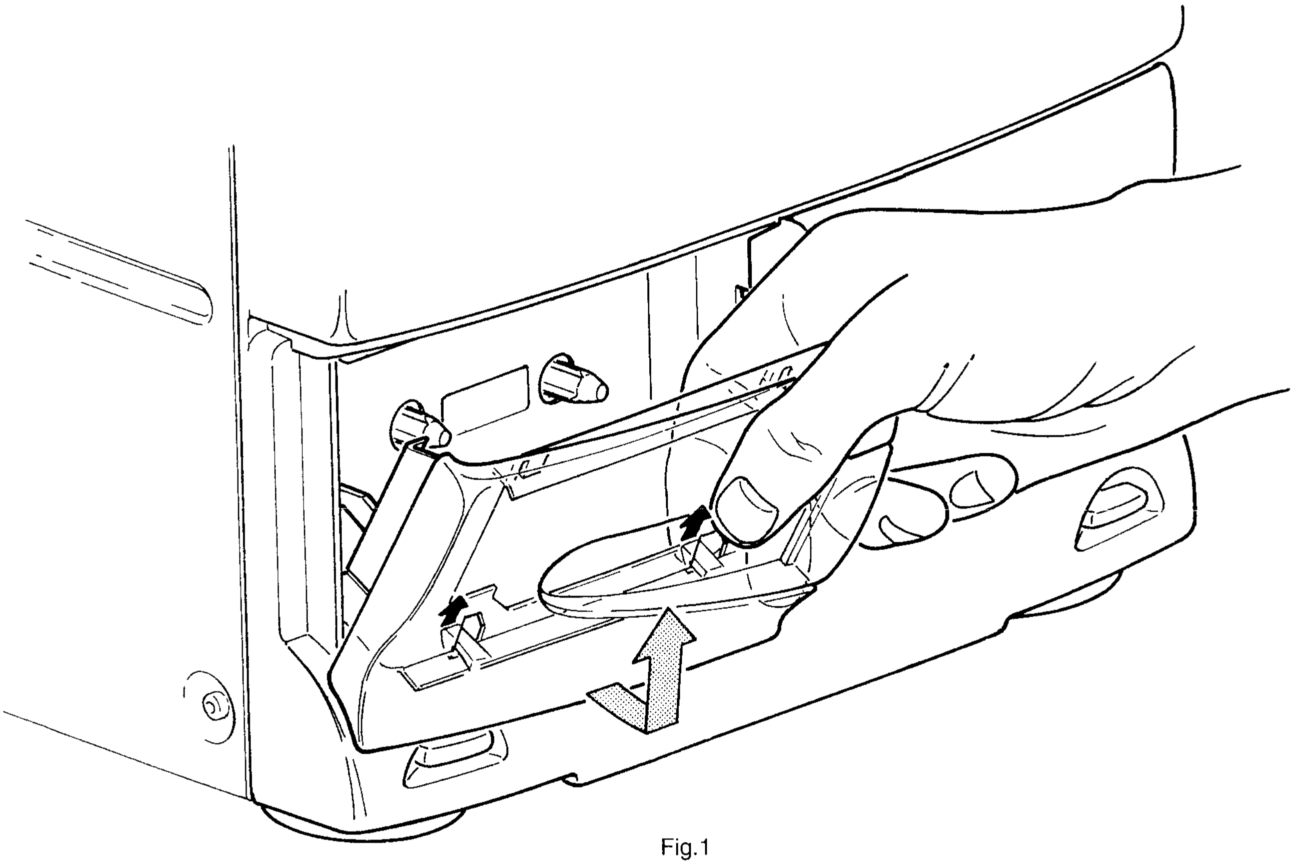
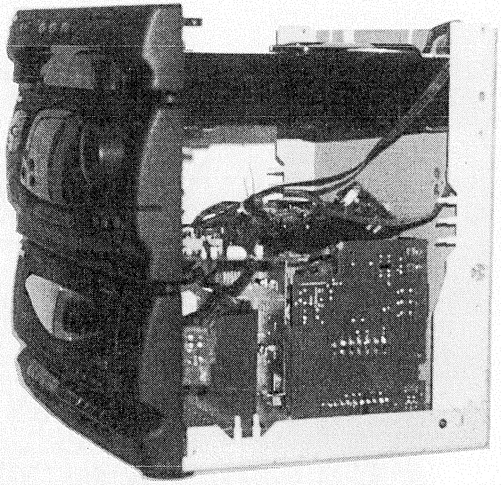
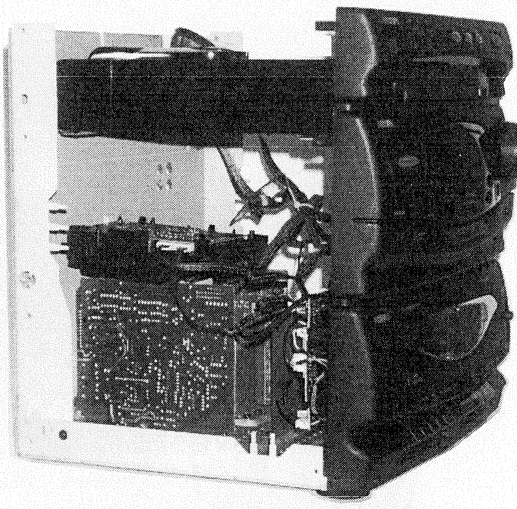


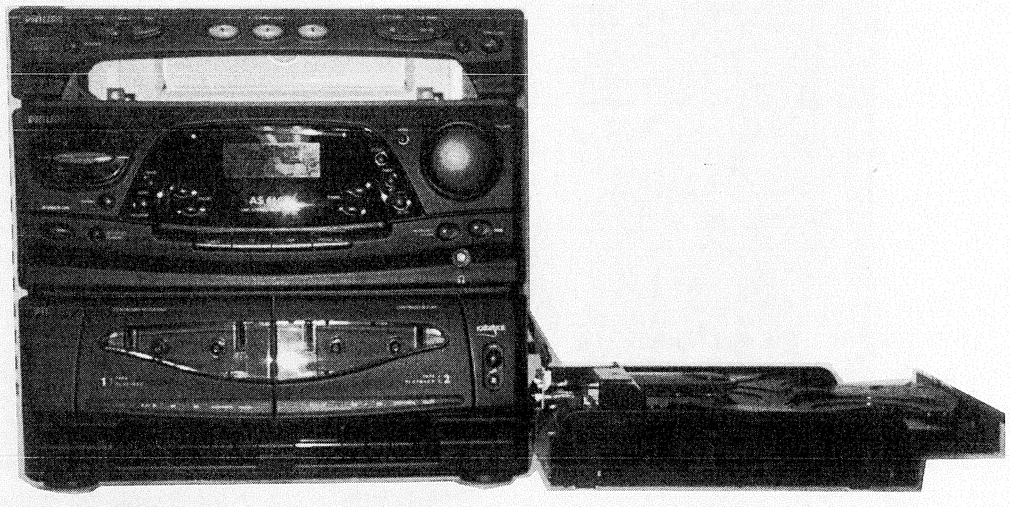
Fig.1



7) Possible Service Position for checking transformer board.

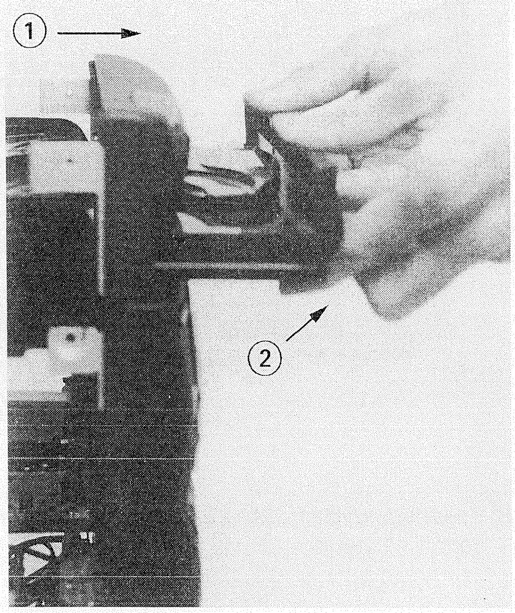


8) Possible Service Position for checking power board.

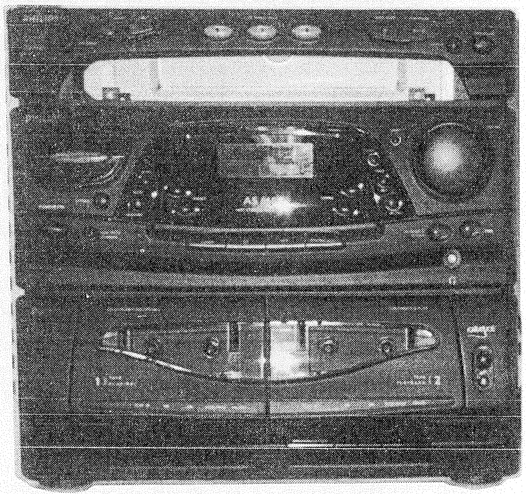


9) Possible Service Position with CDC 3 module detach from main set.

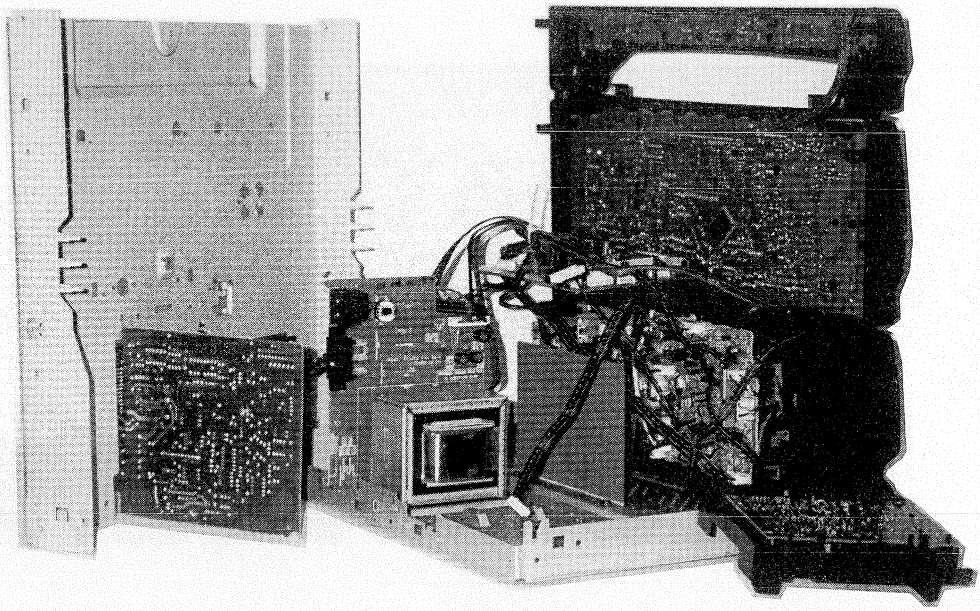
Dismantling of Front



1) Remove top cover
2) Loosen 3X screw on bottom
3) Slide the CD tray out as shown in arrow 1.
4) Remove the CD door as indicated.



5) Loosen 2X screw from the front panel at the CD tray.



6) Possible Service Position.

SERVICE TEST PROGRAM

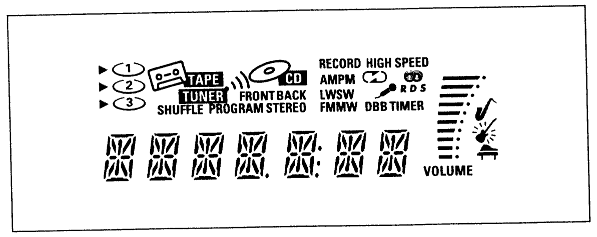
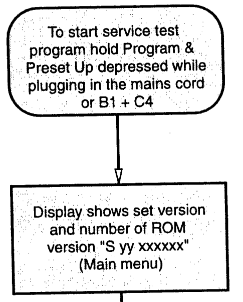

RECORD HIGH SPEED
TAPE
CD
AMPM
TUNER
FRONT BACK
LWSW
RDS
SHUFFLE PROGRAM STEREO
FMMW DBB TIMER
VOLUME

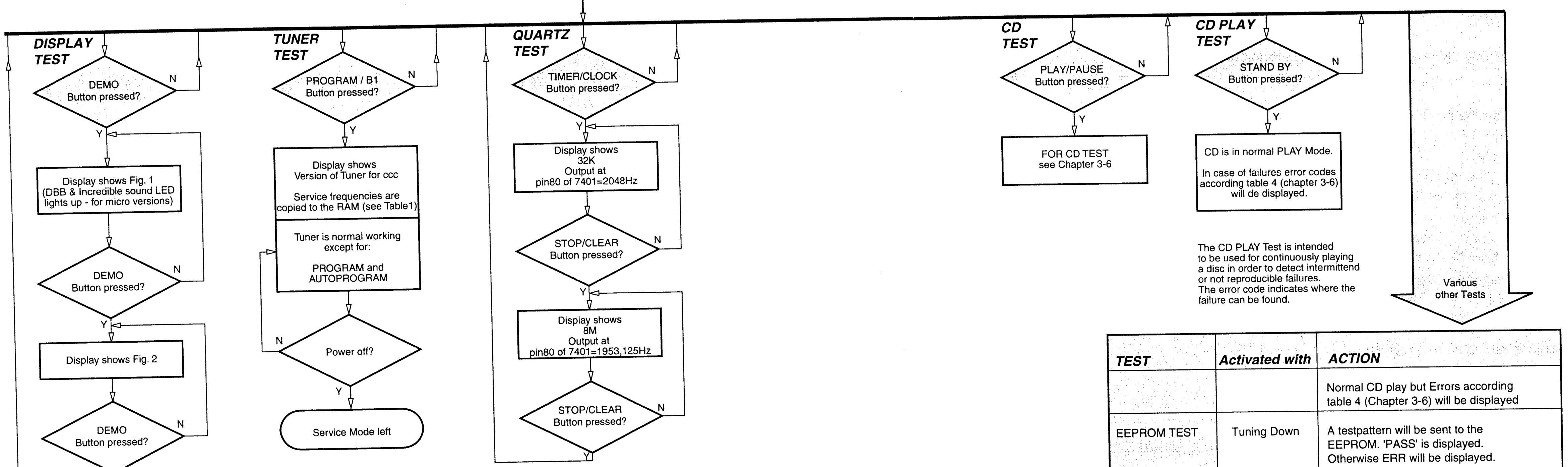
Figure 1

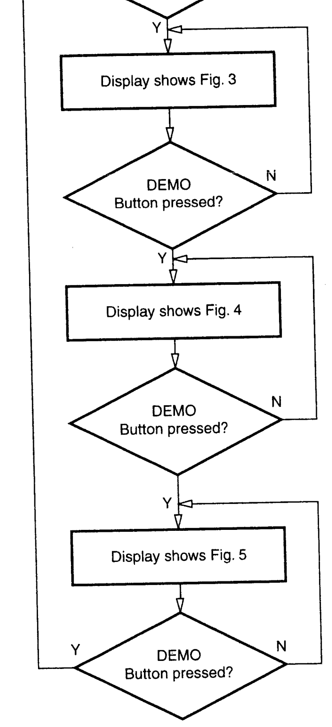

To start service test program hold Program & Preset Up depressed while plugging in the mains cord or B1 + C4
Display shows set version and number of ROM version "S yy xxxxxx" (Main menu)

1) S stands for Service Testprogram

yy stands for software version number of uP on Front Board (counted from 01 upwards)

xxxxxx stands for model numbers


DISPLAY TEST
DEMO Button pressed?
N
Y
Display shows Fig. 1 (DBB & Incredible sound LED lights up - for micro versions)
DEMO Button pressed?
N
Y
Display shows Fig. 2
DEMO Button pressed?
N
TUNER TEST
PROGRAM / B1 Button pressed?
N
Y
Display shows Version of Tuner for ccc
Service frequencies are copied to the RAM (see Table1)
Tuner is normal working except for:
PROGRAM and AUTOPROGRAM
N
Power off?
Y
Service Mode left
QUARTZ TEST
TIMER/CLOCK Button pressed?
N
Y
Display shows 32K Output at pin80 of 7401=2048Hz
STOP/CLEAR Button pressed?
N
Y
Display shows 8M Output at pin80 of 7401=1953,125Hz
STOP/CLEAR Button pressed?
N
Y
CD TEST
PLAY/PAUSE Button pressed?
N
Y
FOR CD TEST see Chapter 3-6
CD PLAY TEST
STAND BY Button pressed?
N
Y
CD is in normal PLAY Mode.
In case of failures error codes according table 4 (chapter 3-6) will de displayed.
The CD PLAY Test is intended to be used for continuously playing a disc in order to detect intermittend or not reproducible failures. The error code indicates where the failure can be found.
Various other Tests


Y
Display shows Fig. 3
DEMO Button pressed?
N
Y
Display shows Fig. 4
DEMO Button pressed?
N
Y
Display shows Fig. 5
Y
DEMO Button pressed?
N

PRESET	Europe "EUR"	East Europe "EAS"	USA "USA"	Oversea "OSE"	Korea "KOR"
1	87.5MHz	65.81MHz	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	74MHz	530kHz	531/530kHz	531kHz
4	1602kHz	87.5MHz	1700kHz	1602/1700kHz	1602kHz
5	558kHz	531kHz	560kHz	558/560kHz	558kHz
6	1494kHz	1602kHz	1500kHz	1494/1500kHz	1494kHz
7	153kHz	558kHz	98.0MHz	87.5/98MHz	87.5MHz
8	279kHz	1494kHz	87.5MHz	87.5MHz	87.5MHz
9	198kHz	153kHz	87.5MHz	87.5MHz	87.5MHz
10	98MHz	279kHz	87.5MHz	87.5MHz	98MHz
11	87.5MHz	198kHz	87.5MHz	98/87.5MHz	98MHz

Table 1

East Europe Tuner IF offset correction

1) Input a reference frequency 87.5MHz from the generator.
2) Proceed to the Tuner Test mode. (Press PROGRAM button).
3) Offset calibration will start to calibrate automatically. (Display will show XX)

XX : offset value

TEST	*Activated with*	*ACTION*
		Normal CD play but Errors according table 4 (Chapter 3-6) will be displayed
EEPROM TEST	Tuning Down	A testpattern will be sent to the EEPROM. 'PASS' is displayed. Otherwise ERR will be displayed.
EEPROM CLEAR	Preset Down	Load default data. Display shows NEW for 1 second. ***Caution!*** ***All presets from the customer are lost!!***
KEY TEST	Preset Up	Key numbers according table 5 are shown on the display. (see Chapter 3-6)
FAST CLOCK TEST	DBB	The clock is switched to fast mode. 'FAST' is displayed for 2 sec. Press DBB again to reset the clock to normal. 'NOM' displayed for 2 sec.
LEAVE SERVICE TESTPROGRAM	disconnect mains	

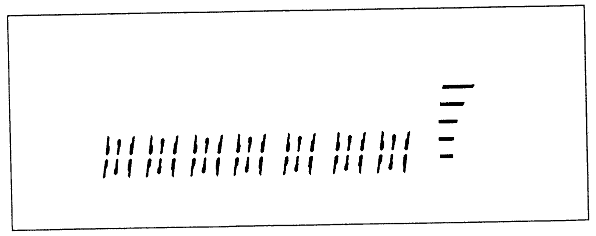


Figure 2

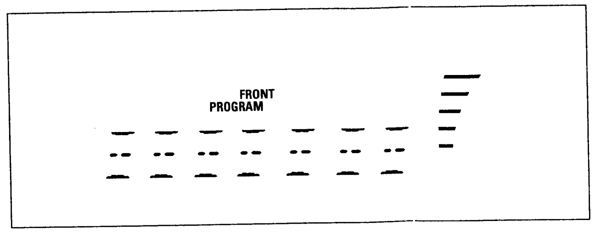

FRONT
PROGRAM

Figure 3

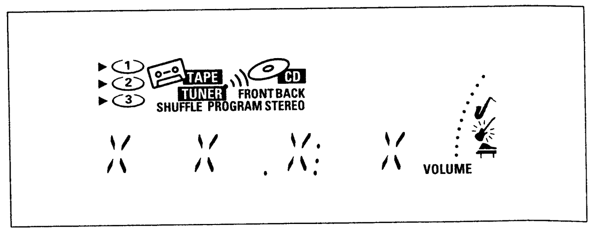

TAPE
CD
TUNER
FRONT BACK
SHUFFLE PROGRAM STEREO
VOLUME

Figure 4

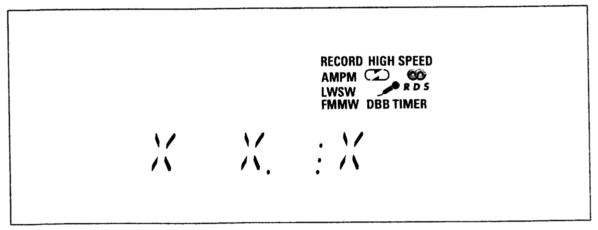
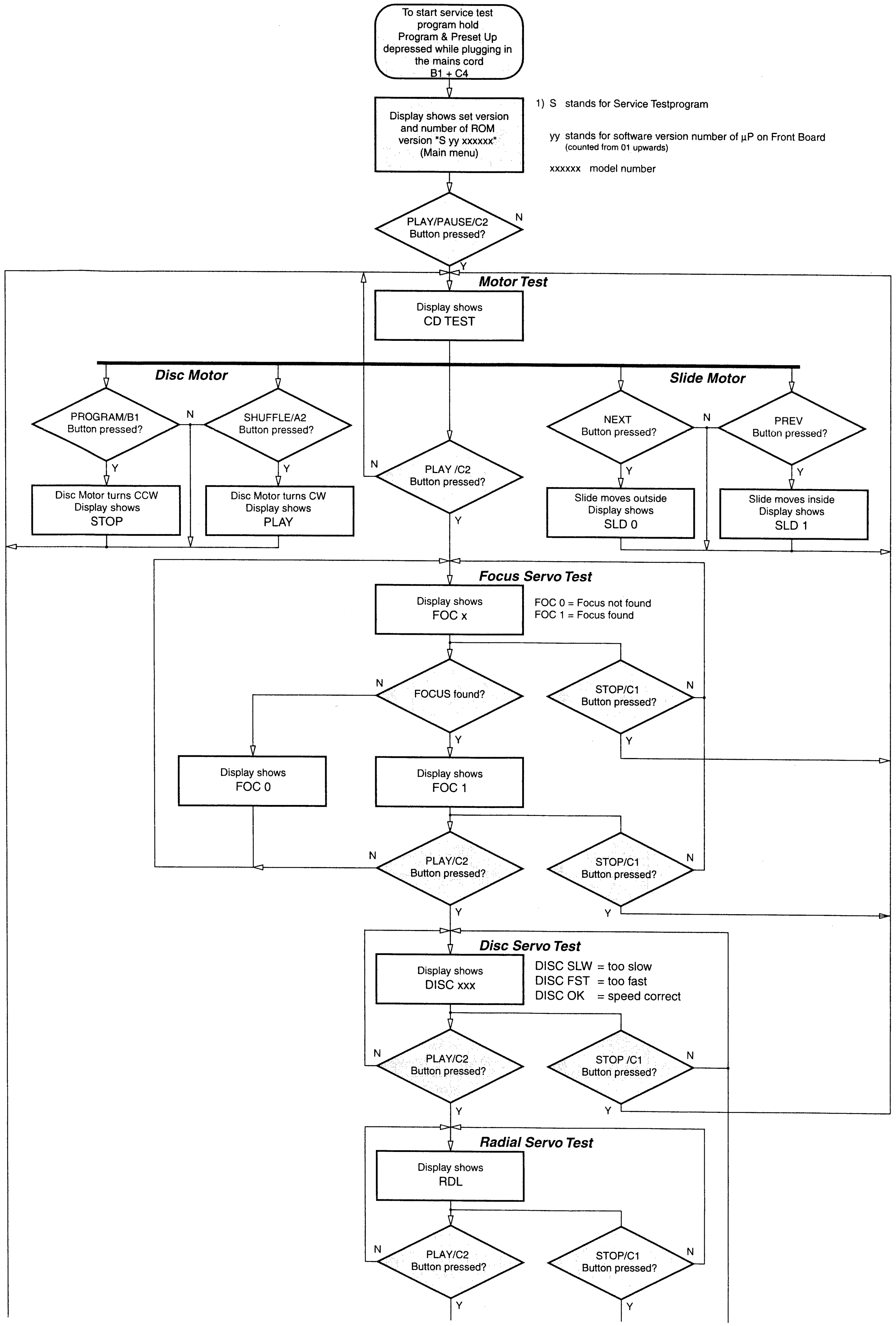

RECORD HIGH SPEED
AMPM
LWSW
RDS
FMMW DBB TIMER

Figure 5

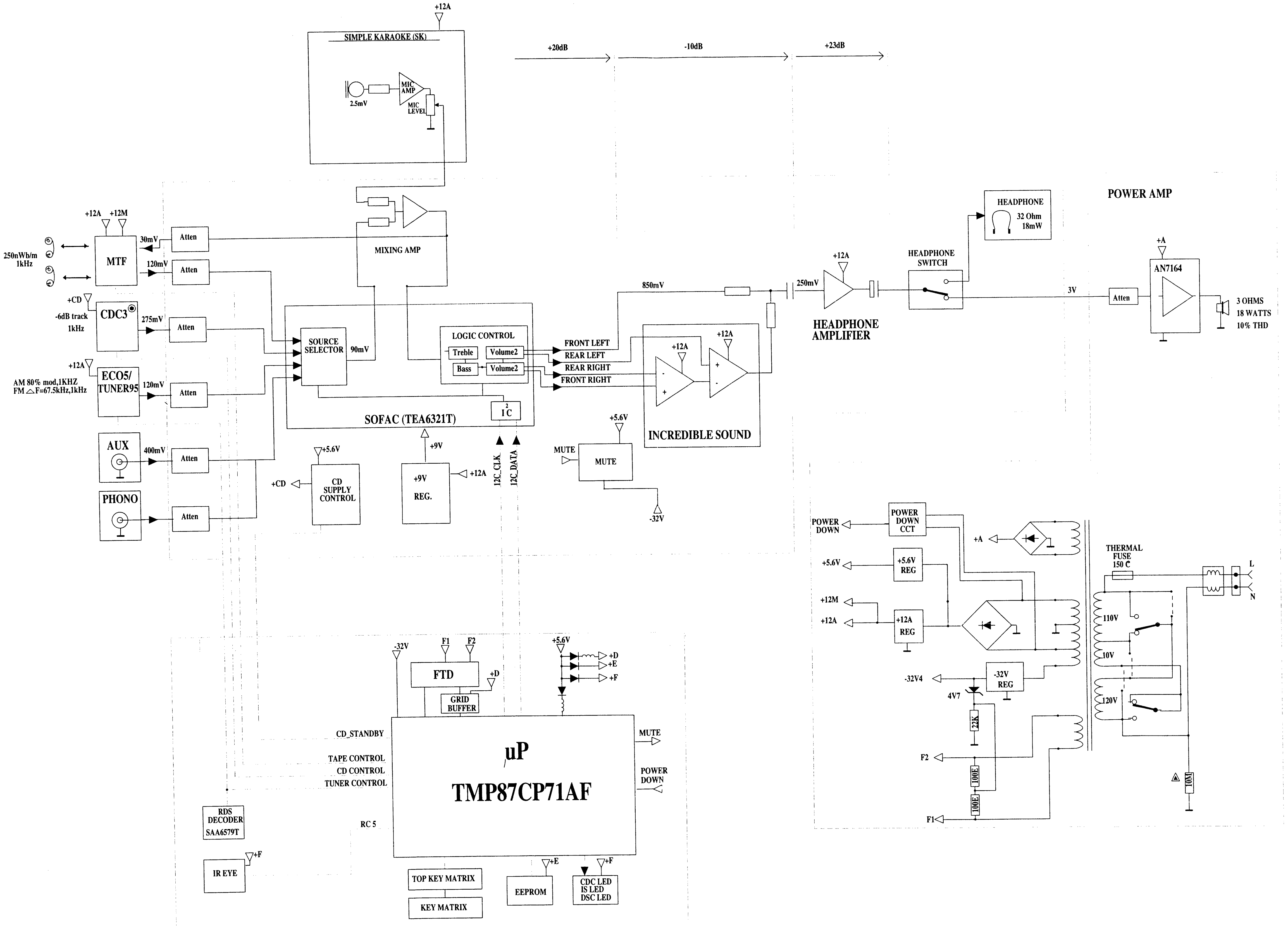
Error number	CD Error description
E 1002	Focus error Triggered when the focus could not found within a certain time when starting up the CD, or when the focus is lost for more than a certain time during playing the CD.
E 1007	Subcode error (no subcode within certain time)
E 1008	TOC error Triggered when during reading the TOC the lead-in(track nr. 0) is left. This can be caused by a misaligned Inner-switch or by a disc with a mispositioned lead-in.
E 1010	Radial error Triggered when the radial servo is not on track for a certain time during playing the CD.
E 1011	Sledge error Generated when the Inner-switch did not open within a certain time when the pickup is moved to the inner position.
E 1012	Fatal sledge error Triggered when the Inner-switch did not close within a certain time when moving the pickup inside. Inner-switch or sledge motor problem.
E 1013	Turnatble motor error Generated when the CD did not reach 75% of speed during startup within a certain time. Disc motor problem.
E 1014	Jump-offtrack error (too less grooves within time)
E 1020	PLL locked error Triggered when the PLL of the decoder did not locked within a certain time.
E 1070	Carousel blocked in a disc position
E 1071	Carousel blocked in the middle
E 1075	Drawer blocked in the middle
E 1076	Drawer blocked in open or closed state

For AS660C/AS665C/AS760C/AS765C

Key activated	Display	Key activated	Display	Key activated	Display
Stop/Clear	01	Clock Set	14	Dbb	27
Program (CDC)	02	Timer Set	15	Optimal	28
Shuffle	03	Timer On/Off	16	Jazz	29
Search/Prev	04	Demo	17	Rock	30
Play/Pause	05	Volume Up	18	Pop	31
Search/Next	06	Volume Down	19	Classic	32
Disc 1	07	Tuning Down	20	HSD	33
Disc 2	08	Tuning Up	21	any RC keys	RC
Disc 3	09	Preset Down	22	Tuner/CD/Tape/	RC
CD Open Close	10	Preset Up	23	Phono-Aux	RC
Program (TU)	11	Power/Standby	24		
Band	12	Incredible Stereo	26		

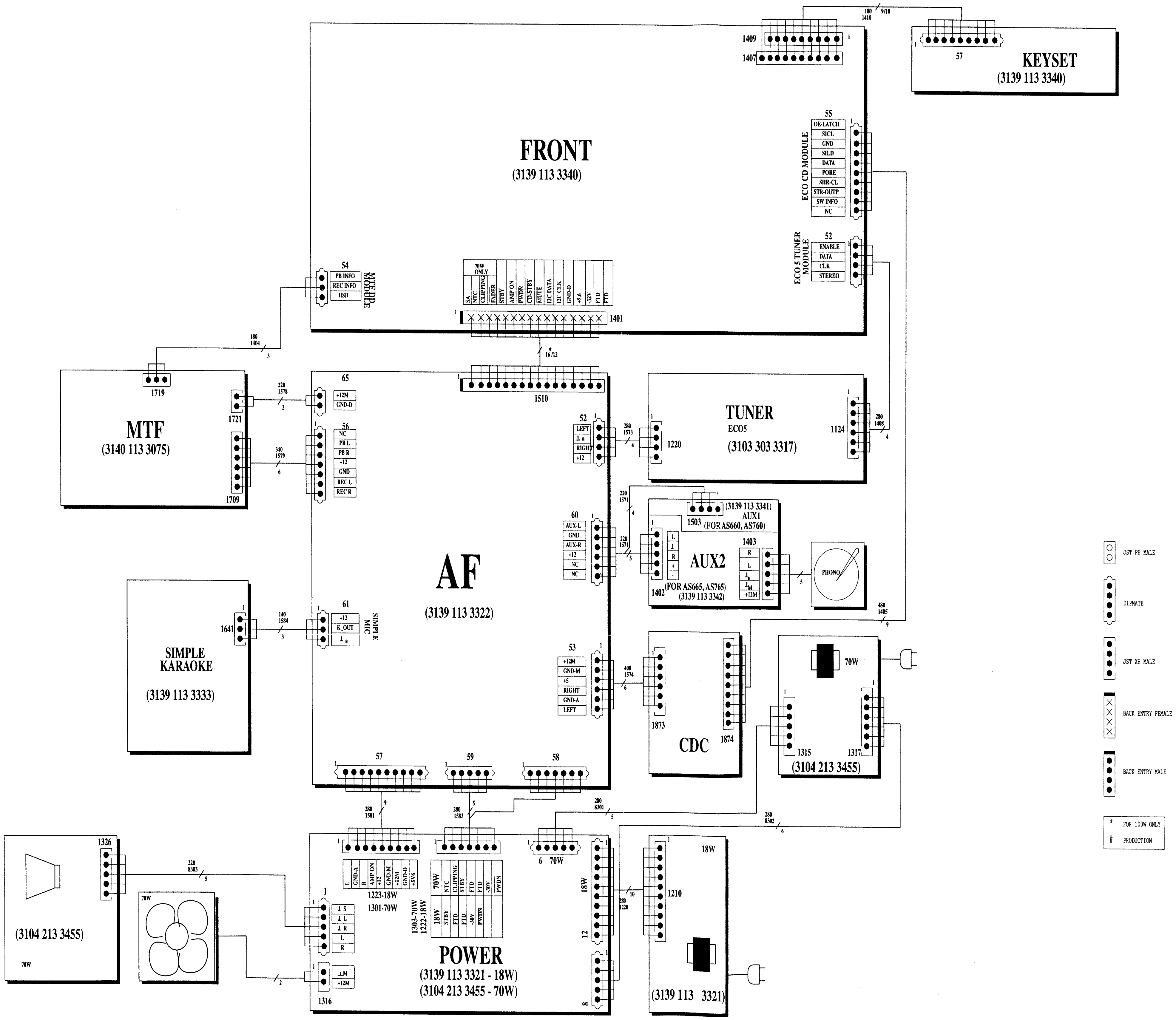

To start service test program hold Program & Preset Up depressed while plugging in the mains cord B1 + C4
Display shows set version and number of ROM version "S yy xxxxxx" (Main menu)
1) S stands for Service Testprogram
yy stands for software version number of µP on Front Board (counted from 01 upwards)
xxxxxx model number
PLAY/PAUSE/C2 Button pressed?
N
Y
Motor Test
Display shows CD TEST
Disc Motor
Slide Motor
PROGRAM/B1 Button pressed?
N
SHUFFLE/A2 Button pressed?
Y
Y
Disc Motor turns CCW Display shows STOP
Disc Motor turns CW Display shows PLAY
N
PLAY /C2 Button pressed?
Y
NEXT Button pressed?
N
PREV Button pressed?
Y
Y
Slide moves outside Display shows SLD 0
Slide moves inside Display shows SLD 1
Focus Servo Test
Display shows FOC x
FOC 0 = Focus not found
FOC 1 = Focus found
N
FOCUS found?
Y
STOP/C1 Button pressed?
N
Y
Display shows FOC 0
Display shows FOC 1
N
PLAY/C2 Button pressed?
Y
STOP/C1 Button pressed?
N
Y
Disc Servo Test
Display shows DISC xxx
DISC SLW = too slow
DISC FST = too fast
DISC OK = speed correct
N
PLAY/C2 Button pressed?
Y
STOP /C1 Button pressed?
N
Y
Radial Servo Test
Display shows RDL
N
PLAY/C2 Button pressed?
Y
STOP/C1 Button pressed?
N
Y

BLOCK DIAGRAM



+12A
SIMPLE KARAOKE (SK)
2.5mV
MIC AMP
MIC LEVEL
+20dB
-10dB
+23dB
MIXING AMP
+12A
+12M
250nWb/m
1kHz
MTF
30mV
120mV
Atten
+CD
CDC3
-6dB track
1kHz
275mV
+12A
AM 80% mod,1KHZ
FM △F=67.5kHz,1kHz
ECO5/
TUNER95
120mV
AUX
400mV
PHONO
SOURCE SELECTOR
90mV
LOGIC CONTROL
Treble
Bass
Volume2
FRONT LEFT
REAR LEFT
REAR RIGHT
FRONT RIGHT
I²C
SOFAC (TEA6321T)
+5.6V
+CD
CD SUPPLY CONTROL
+9V
+9V REG.
+12A
I2C_CLK
I2C_DATA
+5.6V
MUTE
MUTE
-32V
INCREDIBLE SOUND
850mV
250mV
HEADPHONE AMPLIFIER
HEADPHONE
32 Ohm
18mW
HEADPHONE SWITCH
POWER AMP
+A
AN7164
3V
3 OHMS
18 WATTS
10% THD
POWER DOWN
POWER DOWN CCT
+A
+5.6V
+5.6V REG
+12M
+12A
+12A REG
-32V4
-32V REG
4V7
22K
F2
100E
100E
F1
THERMAL FUSE
150 C
110V
10V
120V
L
N
10M
-32V
F1
F2
FTD
+D
GRID BUFFER
+5.6V
+D
+E
+F
CD_STANDBY
TAPE CONTROL
CD CONTROL
TUNER CONTROL
RC 5
uP
TMP87CP71AF
MUTE
POWER DOWN
RDS DECODER
SAA6579T
IR EYE
+F
TOP KEY MATRIX
KEY MATRIX
EEPROM
+E
+F
CDC LED
IS LED
DSC LED

Wiring Diagram


FRONT
(3139 113 3340)
1409
1407
180
1410
9/10
KEYSET
(3139 113 3340)
57
55
ECO CD MODULE
OE-LATCH
SICL
GND
SILD
DATA
PORE
SHR-CL
STR-OUTP
SW INFO
NC
52
ECO 5 TUNER MODULE
ENABLE
DATA
CLK
STEREO
54
MTF DD MODULE
PB INFO
REC INFO
HSD
70W ONLY
SA
NTC
CLIPPING
FADER
STBY
AMP ON
PWDN
CD-STBY
MUTE
I2C DATA
I2C CLK
GND-D
+5.6
-32V
FTD
FTD
1401
*
16/12
180
1404
3
MTF
(3140 113 3075)
1719
1721
1709
220
1578
2
340
1579
6
AF
(3139 113 3322)
65
+12M
GND-D
56
NC
PB L
PB R
+12
GND
REC L
REC R
1510
52
LEFT
⊥ a
RIGHT
+12
280
1573
4
TUNER
ECO5
(3103 303 3317)
1220
1124
280
1408
4
60
AUX-L
GND
AUX-R
+12
NC
NC
220
1571
4
220
1571
5
(3139 113 3341)
AUX1
1503
(FOR AS660, AS760)
AUX2
1402
(FOR AS665, AS765)
(3139 113 3342)
L
⊥
R
+
-
1403
R
L
⊥
⊥M
+12M
5
PHONO
480
1405
9
SIMPLE KARAOKE
(3139 113 3333)
1641
140
1584
3
61
+12
K_OUT
⊥ a
SIMPLE MIC
53
+12M
GND-M
+5
RIGHT
GND-A
LEFT
400
1574
6
CDC
1873
1874
70W
1315
1317
(3104 213 3455)
57
59
58
280
1581
9
280
1583
5
280
8301
5
280
8302
6
1326
(3104 213 3455)
70W
220
8303
5
70W
2
POWER
(3139 113 3321 - 18W)
(3104 213 3455 - 70W)
L
GND-A
R
AMP ON
+12
GND-M
+12M
GND-D
+5V6
1223-18W
1301-70W
1303-70W
1222-18W
70W
NTC
CLIPPING
STBY
FTD
FTD
-30V
PWDN
18W
STBY
FTD
FTD
-30V
PWDN
6 70W
18W
12
8
⊥ S
⊥ L
⊥ R
L
R
⊥M
+12M
1316
10
280
1220
18W
1210
(3139 113 3321)
JST PH MALE
DIPMATE
JST XH MALE
BACK ENTRY FEMALE
BACK ENTRY MALE
* FOR 100W ONLY
# PRODUCTION

FRONT BOARD

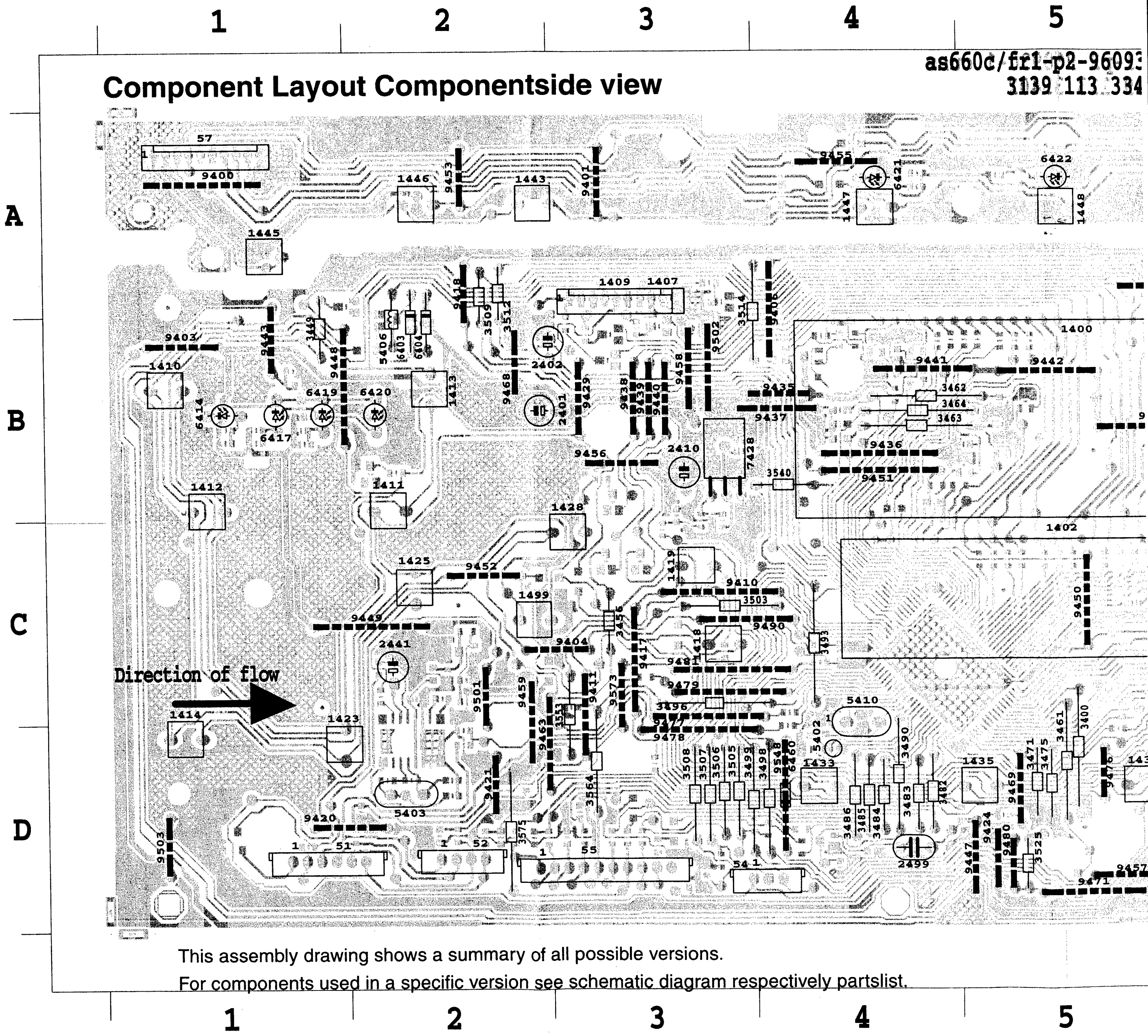
TABLE OF CONTENTS

Component Layout 6-1
Circuit Diagram 6-2
Component Layout (Chip) 6-3
Partslist 6-

1400 B 5	1413 B 2	1423 D 1	1433 D 4	1446 A 2	2401 B 2	2471 B 7	3445 C 6	3463 B 4	3483 D 4	3499 D 3	3512 A 2	3564 D 3	6404 B
1401 D 7	1414 D 1	1424 B 8	1434 D 5	1447 A 4	2402 B 2	2499 D 4	3447 B 8	3464 B 4	3484 D 4	3503 C 3	3514 A 4	3575 D 2	6414 B
1402 C 5	1415 D 9	1425 C 2	1435 D 5	1448 A 5	2410 B 3	3400 D 5	3449 B 1	3470 C 7	3485 D 4	3505 D 3	3516 C 9	5402 D 4	6416 C
1407 A 3	1416 D 8	1426 C 8	1441 A 8	1449 A 6	2422 D 8	3431 C 6	3450 C 8	3471 D 5	3486 D 4	3506 D 3	3519 B 7	5403 D 2	6417 B
1409 A 3	1417 C 7	1427 B 7	1442 A 8	1450 A 9	2425 D 6	3438 C 6	3456 C 3	3475 D 5	3490 D 4	3507 D 3	3521 D 7	5406 B 2	6418 C
1410 B 1	1418 C 3	1428 C 3	1443 A 2	1468 B 9	2426 D 6	3440 C 6	3460 C 7	3478 C 7	3493 C 4	3508 D 3	3525 D 5	5410 C 4	6419 B
1411 B 2	1419 C 3	1431 C 7	1444 A 9	1499 C 2	2441 C 2	3442 C 6	3461 D 5	3480 C 7	3496 C 3	3509 A 2	3540 B 4	5411 D 8	6420 B
1412 B 1	1420 C 7	1432 D 6	1445 A 1	1601 D 9	2470 D 8	3444 C 6	3462 B 4	3482 D 4	3498 D 4	3510 D 7	3553 C 3	6403 B 2	6421 A

Component Layout Componentside view

as660c/fr1-p2-9609
3139 113 334



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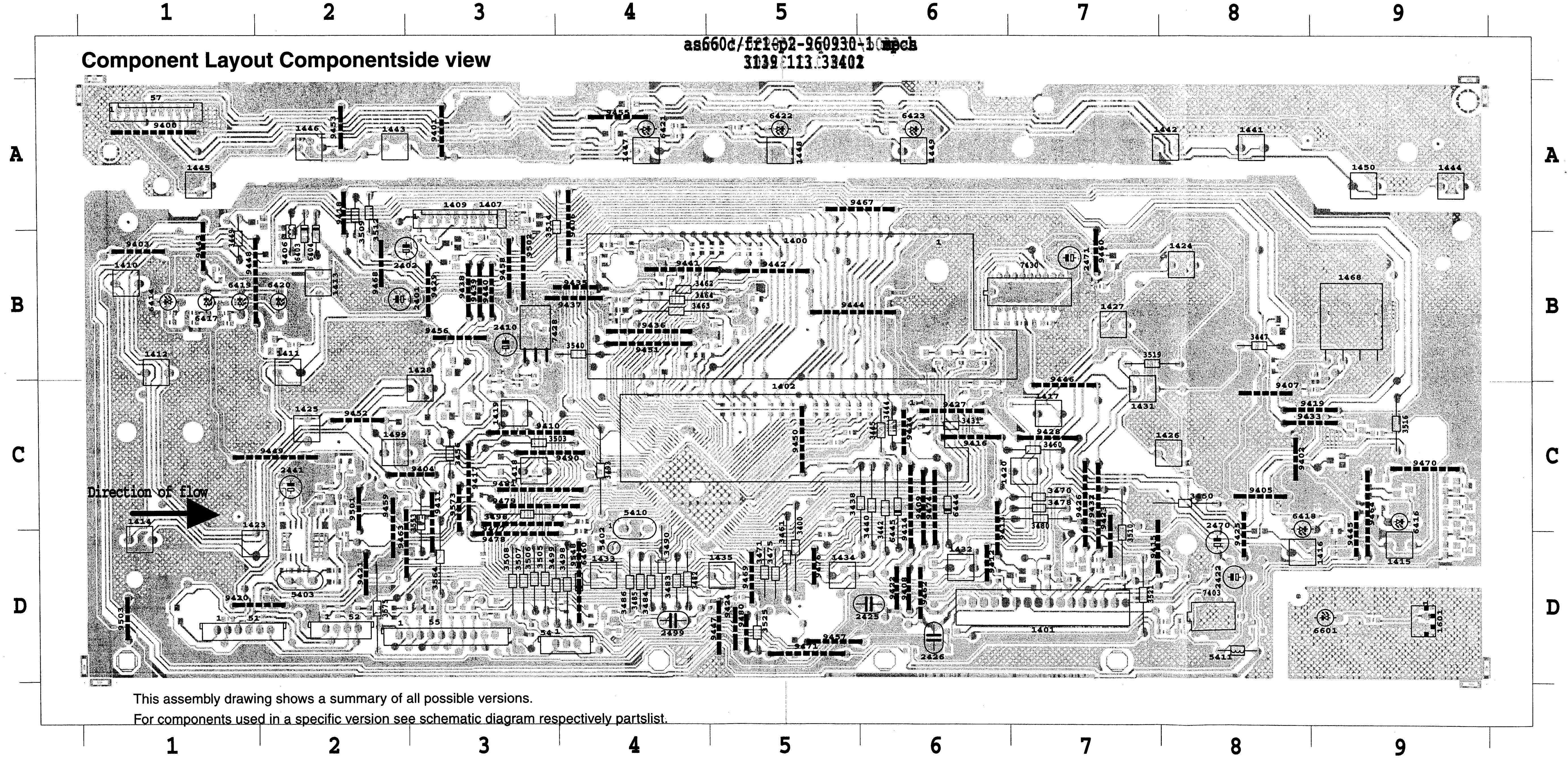
5410
1433
1435
2499
9471
3493
Direction of flow

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1400 B 5	1413 B 2	1423 D 1	1433 D 4	1446 A 2	2401 B 2	2471 B 7	3445 C 6	3463 B 4	3483 D 4	3499 D 3	3512 A 2	3564 D 3	6404 B 2	6422 A 5	7430 B 7	9407 C 8	9415 D 7	9423 D 7	9433 C 9	9441 B 4	9449 C 2	9458 B 3	9469 D 5	9480 D 5
1401 D 7	1414 D 1	1424 B 8	1434 D 5	1447 A 4	2402 B 2	2499 D 4	3447 B 8	3464 B 4	3484 D 4	3503 C 3	3514 A 4	3575 D 2	6414 B 1	6423 A 6	9400 A 1	9408 D 6	9416 C 6	9424 D 5	9434 C 6	9442 B 5	9450 C 5	9459 C 2	9470 C 9	9481 C 3
1402 C 5	1415 D 9	1425 C 2	1435 D 5	1448 A 5	2410 B 3	3400 D 5	3449 B 1	3470 C 7	3485 D 4	3505 D 3	3516 C 9	5402 D 4	6416 C 9	6444 C 6	9401 A 3	9409 C 6	9417 C 3	9425 D 8	9435 B 4	9443 B 1	9451 B 4	9460 B 7	9471 D 5	9490 C 3
1407 A 3	1416 D 8	1426 C 8	1441 A 8	1449 A 6	2422 D 8	3431 C 6	3450 C 8	3471 D 5	3486 D 4	3506 D 3	3519 B 7	5403 D 2	6417 B 1	6445 C 6	9402 C 8	9410 C 3	9418 A 2	9426 C 7	9436 B 4	9444 B 5	9452 C 2	9462 D 6	9474 C 6	9501 C 2
1409 A 3	1417 C 7	1427 B 7	1442 A 8	1450 A 9	2425 D 6	3438 C 6	3456 C 3	3475 D 5	3490 D 4	3507 D 3	3521 D 7	5406 B 2	6418 C 8	6460 D 4	9403 B 1	9411 C 3	9419 C 9	9427 C 6	9437 B 4	9445 D 9	9453 A 2	9463 D 2	9476 D 5	9502 B 3
1410 B 1	1418 C 3	1428 C 3	1443 A 2	1468 B 9	2426 D 6	3440 C 6	3460 C 7	3478 C 7	3493 C 4	3508 D 3	3525 D 5	5410 C 4	6419 B 1	6601 D 9	9404 C 3	9412 D 6	9420 D 1	9428 C 7	9438 B 3	9446 C 7	9455 A 4	9464 C 9	9477 C 3	9503 D 1
1411 B 2	1419 C 3	1431 C 7	1444 A 9	1499 C 2	2441 C 2	3442 C 6	3461 D 5	3480 C 7	3496 C 3	3509 A 2	3540 B 4	5411 D 8	6420 B 2	7403 D 8	9405 C 8	9413 C 6	9421 D 2	9429 B 3	9439 B 3	9447 D 5	9456 B 3	9467 A 6	9478 D 3	9548 D 4
1412 B 1	1420 C 7	1432 D 6	1445 A 1	1601 D 9	2470 D 8	3444 C 6	3462 B 4	3482 D 4	3498 D 4	3510 D 7	3553 C 3	6403 B 2	6421 A 4	7428 B 3	9406 A 4	9414 C 6	9422 D 6	9432 C 7	9440 B 3	9448 B 1	9457 D 5	9468 B 2	9479 C 3	9573 C 3

Component Layout Componentside view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A
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C
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as660c/fr1-p2-960930-1 mpch
3139 113 33402
Direction of flow
1400
1401
1402
1409
1407
1410
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1415
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1601
2402
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2422
2425
2426
2441
2470
2471
2499
5410
5411
6416
6418
6420
6422
6423
6601
7403
7430
9403
9408
9444
9467
9470
57
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52
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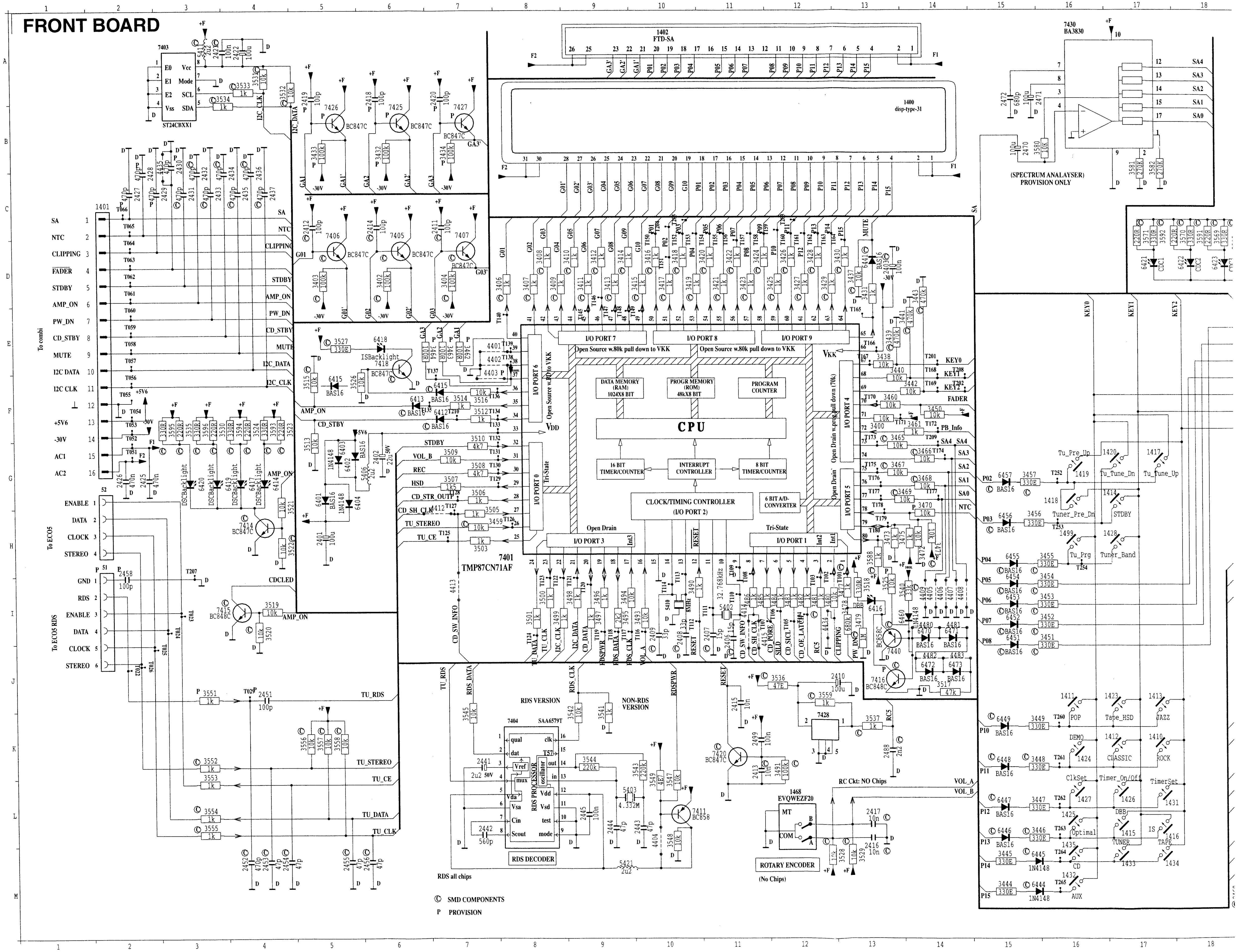
54

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1400 B14	1416 L17	1431 L17	1447 A20	2407 I11	2418 A 6	2431 C 3	2444 L 9	2461 M19	3406 D 8	3417 D10	3428 D12	3441 E14	3452 I16	3464 E 7	3477 I13	3491 K12	3505 H 7	3517 J14	3528 M13	3541 K 9	3554 L 3	3566 L19	3586 I19	4408 I14	5402 I11	6404 G 5
1401 C 2	1417 G17	1432 M16	1448 A19	2408 I10	2419 A 5	2432 C 3	2445 L 9	2462 M19	3407 D 8	3418 D10	3429 D12	3442 F14	3453 I16	3465 F13	3478 I13	3493 I10	3506 G 7	3518 I13	3529 M13	3542 K 9	3555 L 3	3567 M19	3587 I19	4409 I14	5403 L 9	6412 F 7
1402 A10	1418 G16	1433 M17	1449 A20	2409 I10	2420 A 7	2433 C 3	2451 J 4	2470 B15	3408 D 8	3419 D10	3430 D13	3443 D14	3454 I16	3466 G14	3479 I13	3494 I 9	3507 G 7	3519 I 4	3530 G 3	3543 K10	3556 K 5	3568 M19	3588 H13	4412 H 7	5406 G 6	6413 F 6
1407 E19	1419 G16	1434 M17	1450 B19	2410 J13	2421 A 3	2434 C 4	2452 M 4	2471 A15	3409 D 8	3420 D11	3431 D13	3444 M15	3455 H16	3467 G13	3480 I12	3495 I 9	3508 G 7	3520 I 4	3531 A 4	3544 K 9	3557 K 5	3569 C18	3601 I22	4413 I 7	5410 I10	6414 G 4
1409 E20	1420 G17	1435 M16	1468 L12	2411 C 7	2422 A 4	2435 C 4	2453 M 4	2472 A15	3410 D 9	3421 D11	3432 B 6	3445 M15	3456 H15	3468 G14	3481 I12	3496 I 9	3509 G 7	3521 G 4	3532 A 4	3545 K 7	3558 K 5	3570 C18	4401 E 7	4414 I11	5411 A 3	6415 F 7
1410 K17	1423 J17	1441 B20	1499 H16	2412 C 5	2425 G 3	2436 C 4	2454 M 4	2488 K13	3411 D 9	3422 D11	3433 B 5	3446 L15	3457 G15	3469 G14	3482 I12	3497 I 9	3510 F 7	3522 H 4	3533 A 4	3547 L10	3559 J12	3571 C17	4402 E 7	4415 I11	5421 M 9	6416 I13
1411 J16	1424 K16	1442 B19	1601 I22	2413 K11	2426 G 2	2437 C 4	2455 M 5	2499 K11	3412 D 9	3423 D11	3434 B 7	3447 L15	3459 H 7	3470 G14	3483 I12	3498 I 9	3512 F 7	3523 G 4	3534 A 4	3548 L10	3561 K19	3575 L19	4403 F 7	4434 I12	55 K20	6417 G 4
1412 K17	1425 L16	1443 C20	2401 H 5	2414 C 6	2427 C 2	2438 K19	2456 M 6	3400 F13	3413 D 9	3424 D11	3437 D13	3448 K15	3460 F13	3471 H14	3484 I12	3499 I 8	3513 G 5	3524 G 4	3535 G 3	3549 L10	3562 K19	3580 B16	4404 L10	4435 B 3	57 A22	6418 E 6
1413 J17	1426 L17	1444 B19	2402 G 6	2415 J11	2428 C 2	2441 K 7	2458 H 2	3402 D 6	3414 D 9	3425 D12	3438 E13	3449 K15	3461 F14	3472 H14	3485 I11	3500 I 8	3514 F 7	3525 I13	3536 J12	3551 J 3	3563 K19	3581 B17	4405 I14	51 H 2	6401 G 5	6419 G 3
1414 G17	1427 L16	1445 C19	2403 D13	2416 L13	2429 C 3	2442 L 7	2459 J18	3403 D 5	3415 D10	3426 D12	3439 E13	3450 F14	3462 E 7	3473 H13	3486 I11	3501 I 8	3515 F 5	3526 F 5	3537 K13	3552 K 3	3564 L19	3582 B17	4406 I14	52 G 2	6402 G 5	6420 G 3
1415 L17	1428 H17	1446 C19	2406 I11	2417 L13	2430 B 3	2443 L10	2460 M18	3404 D 7	3416 D10	3427 D12	3440 E13	3451 I16	3463 E 7	3475 H14	3490 I10	3503 H 7	3516 F 7	3527 E 5	3540 I14	3553 K 3	3565 L19	3585 I19	4407 I14	54 H20	6403 G 5	6421 D17

FRONT BOARD



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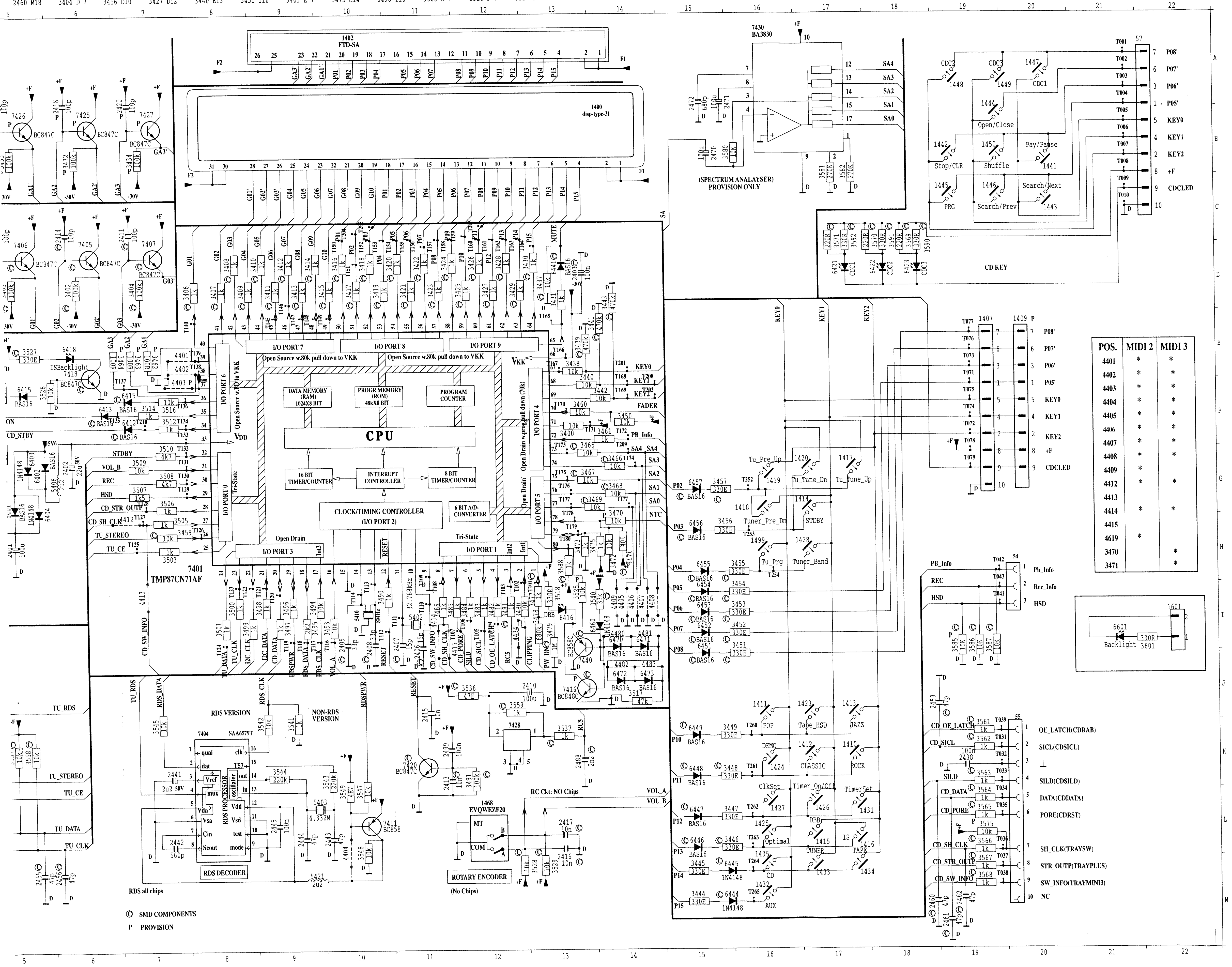
H
I
J
K
L
M
7403
ST24CBXX1
E0
E1
E2
Vss
Vcc
Mode
SCL
SDA
I2C_DATA
I2C_CLK
1401
To combi
SA
NTC
CLIPPING
FADER
STDBY
AMP_ON
PW_DN
CD_STBY
MUTE
I2C DATA
I2C CLK
+5V6
-30V
AC1
AC2
To ECO5
ENABLE
DATA
CLOCK
STEREO
To ECO5 RDS
GND
RDS
7426
7425
7427
7406
7405
7407
BC847C
GA1
GA2
GA3
G01
G02
G03
-30V
DSCBacklight
ISBacklight
7418
7414
7415
BC848C
AMP_ON
CD_STBY
CDCLED
1402
FTD-SA
1400
disp-type-31
F1
F2
7430
BA3830
(SPECTRUM ANALAYSER)
PROVISION ONLY
SA4
SA3
SA2
SA1
SA0
7401
TMP87CN71AF
I/O PORT 7
I/O PORT 8
I/O PORT 9
I/O PORT 6
I/O PORT 0
I/O PORT 3
I/O PORT 1
I/O PORT 4
I/O PORT 5
Open Source w.80k pull down to VKK
VKK
VDD
DATA MEMORY (RAM) 1024X8 BIT
PROGR MEMORY (ROM) 48KX8 BIT
PROGRAM COUNTER
CPU
16 BIT TIMER/COUNTER
INTERRUPT CONTROLLER
8 BIT TIMER/COUNTER
CLOCK/TIMING CONTROLLER (I/O PORT 2)
6 BIT A/D-CONVERTER
Open Drain
Tri-State
RESET
STDBY
VOL_B
REC
HSD
CD_STR_OUT
CD_SH_CLK
TU_STEREO
TU_CE
CD_SW_INFO
KEY0
KEY1
KEY2
FADER
PB_Info
NTC
MUTE
TU_RDS
TU_CE
TU_DATA
TU_CLK
RDS VERSION
NON-RDS VERSION
7404
SAA6579T
RDS PROCESSOR
RDS DECODER
RDS all chips
4.332M
7411
BC858
7420
BC847C
7428
7440
7416
32.768kHz
RC Ckt: NO Chips
VOL_A
VOL_B
1468
EVQWEZF20
MT
COM
ROTARY ENCODER
(No Chips)
Tu_Pre_Up
Tu_Tune_Dn
Tu_Tune_Up
Tuner_Pre_Dn
STDBY
Tu_Prg
Tuner_Band
POP
Tape_HSD
JAZZ
DEMO
CLASSIC
ROCK
ClkSet
Timer_On/Off
TimerSet
DBB
Optimal
TUNER
IS
TAPE
CD
AUX
BAS16
1N4148
© SMD COMPONENTS
P PROVISION

2444	L 9
2445	L 9
2451	J 4
2452	M 4
2453	M 4
2454	M 4
2455	M 5
2456	M 6
2458	H 2
2459	J18
2460	M18
2461	M19
2462	M19
2470	B15
2471	A15
2472	A15
2488	K13
2499	K11
3400	F13
3402	D 6
3403	D 5
3404	D 7
3406	D 8
3407	D 8
3408	D 8
3409	D 8
3410	D 9
3411	D 9
3412	D 9
3413	D 9
3414	D 9
3415	D10
3416	D10
3417	D10
3418	D10
3419	D10
3420	D11
3421	D11
3422	D11
3423	D11
3424	D11
3425	D12
3426	D12
3427	D12
3428	D12
3429	D12
3430	D13
3431	D13
3432	B 6
3433	B 5
3434	B 7
3437	D13
3438	E13
3439	E13
3440	E13
3441	E14
3442	F14
3443	D14
3444	M15
3445	M15
3446	L15
3447	L15
3448	K15
3449	K15
3450	F14
3451	I16
3452	I16
3453	I16
3454	I16
3455	H16
3456	H15
3457	G15
3459	H 7
3460	F13
3461	F14
3462	E 7
3463	E 7
3464	E 7
3465	F13
3466	G14
3467	G13
3468	G14
3469	G14
3470	G14
3471	H14
3472	H14
3473	H13
3475	H14
3477	I13
3478	I13
3479	I13
3480	I12
3481	I12
3482	I12
3483	I12
3484	I12
3485	I11
3486	I11
3490	I10
3491	K12
3493	I10
3494	I 9
3495	I 9
3496	I 9
3497	I 9
3498	I 9
3499	I 8
3500	I 8
3501	I 8
3503	H 7
3505	H 7
3506	G 7
3507	G 7
3508	G 7
3509	G 7
3510	F 7
3512	F 7
3513	G 5
3514	F 7
3515	F 5
3516	F 7
3517	J14
3518	I13
3519	I 4
3520	I 4
3521	G 4
3522	H 4
3523	G 4
3524	G 4
3525	I13
3526	F 5
3527	E 5
3528	M13
3529	M13
3530	G 3
3531	A 4
3532	A 4
3533	A 4
3534	A 4
3535	G 3
3536	J12
3537	K13
3540	I14
3541	K 9
3542	K 9
3543	K10
3544	K 9
3545	K 7
3547	L10
3548	L10
3549	L10
3551	J 3
3552	K 3
3553	K 3
3554	L 3
3555	L 3
3556	K 5
3557	K 5
3558	K 5
3559	J12
3561	K19
3562	K19
3563	K19
3564	L19
3565	L19
3566	L19
3567	M19
3568	M19
3569	C18
3570	C18
3571	C17
3575	L19
3580	B16
3581	B17
3582	B17
3585	I19
3586	I19
3587	I19
3588	H13
3601	I22
4401	E 7
4402	E 7
4403	F 7
4404	L10
4405	I14
4406	I14
4407	I14
4408	I14
4409	I14
4412	H 7
4413	I 7
4414	I11
4415	I11
4434	I12
4435	B 3
51	H 2
52	G 2
54	H20
5402	I11
5403	L 9
5406	G 6
5410	I10
5411	A 3
5421	M 9
55	K20
57	A22
6401	G 5
6402	G 5
6403	G 5
6404	G 5
6412	F 7
6413	F 6
6414	G 4
6415	F 7
6416	I13
6417	G 4
6418	E 6
6419	G 3
6420	G 3
6421	D17
6422	D17
6423	D18
6441	D13
6444	M15
6445	M15
6446	L15
6447	L15
6448	K15
6449	K15
6451	I15
6452	I15
6453	I15
6454	I15
6455	H15
6456	H15
6457	G15
6460	I14
6601	I21
7401	H 8
7403	A 3
7404	K 8
7405	C 6
7406	C 5
7407	C 7
7411	L10
7414	H 4
7415	I 4
7416	J13
7418	E 6
7420	K11
7425	B 6
7426	B 5
7427	B 7
7428	K12
7430	A16
7440	J13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A
B
C
D
E
F
G
H
I
J
K
L
M
1402
FTD-SA
F1
F2
1400
disp-type-31
GA3'
GA2'
GA1'
P01
P02
P03
P04
P05
P06
P07
P08
P09
P10
P11
P12
P13
P14
P15
G01'
G02'
G03'
G04
G05
G06
G07
G08
G09
G10
7426
7425
7427
7406
7405
7407
BC847C
GA1'
GA2
GA2'
GA3
-30V
30V
G01'
G02
G02'
G03
G03'
7430
BA3830
+F
(SPECTRUM ANALAYSER)
PROVISION ONLY
SA4
SA3
SA2
SA1
SA0
CDC2
CDC3
CDC1
1447
1448
1449
1444
Open/Close
1442
1450
Pay/Pause
Stop/CLR
Shuffle
1441
1445
1446
Search/Next
PRG
Search/Prev
1443
CD KEY
6421
6422
6423
CDC1
CDC2
CDC3
T001
T002
T003
T004
T005
T006
T007
T008
T009
T010
57
P08'
P07'
P06'
P05'
KEY0
KEY1
KEY2
+F
CDCLED
MUTE
I/O PORT 7
I/O PORT 8
I/O PORT 9
Open Source w.80k pull down to VKK
VKK
I/O PORT 6
Open Source w.80k pull down to VKK
VDD
I/O PORT 0
Tri-State
DATA MEMORY
(RAM)
1024X8 BIT
PROGR MEMORY
(ROM)
48KX8 BIT
PROGRAM
COUNTER
CPU
16 BIT
TIMER/COUNTER
INTERRUPT
CONTROLLER
8 BIT
TIMER/COUNTER
CLOCK/TIMING CONTROLLER
(I/O PORT 2)
6 BIT A/D-
CONVERTER
I/O PORT 4
Open Drain w.prog. pull down (70k)
I/O PORT 5
Open Drain
I/O PORT 3
Open Drain
I/O PORT 1
Tri-State
RESET
Int1
Int2
Int3
7401
TMP87CN71AF
ISBacklight
6418
7418
ON
CD_STBY
STDBY
VOL_B
REC
HSD
CD_STR_OUT
CD_SH_CLK
TU_STEREO
TU_CE
CD_SW_INFO
TU_RDS
TU_DATA
TU_CLK
I2C_CLK
I2C_DATA
CD_DATA
RDSPWR
RDS_DATA
RDS_CLK
VOL_A
CD_SW_INFO
CD_SH_CLK
CD_PORE
SILD
CD_SICL
CD_OE_LATCH
RC5
CLIPPING
PW_DOWN
DBB
32.768kHz
8MHz
KEY0
KEY1
KEY2
FADER
PB_Info
SA4
NTC
7416
BC848C
7440
BC858C
RDS VERSION
NON-RDS
VERSION
7404
SAA6579T
qual
dat
Vref
mux
Vda
Vsa
Cin
Scout
clk
T57
out
in
Vdd
Vsd
test
mode
RDS PROCESSOR
oscillator
RDS DECODER
RDS all chips
4.332M
7411
BC858
7428
7420
BC847C
1468
EVQWEZF20
MT
COM
ROTARY ENCODER
(No Chips)
RC Ckt: NO Chips
VOL_A
VOL_B
P02
P03
P04
P05
P06
P07
P08
P10
P11
P12
P13
P14
P15
BAS16
1N4148
Tu_Pre_Up
1420
1417
1419
Tu_Tune_Dn
Tu_Tune_Up
1418
1414
Tuner_Pre_Dn
STDBY
1499
1428
Tu_Prg
Tuner_Band
1411
1423
1413
POP
Tape_HSD
JAZZ
DEMO
1412
1410
1424
CLASSIC
ROCK
ClkSet
Timer_On/Off
TimerSet
1427
1426
1431
1425
DBB
IS
Optimal
1415
1416
TUNER
TAPE
1435
1433
1434
CD
1432
AUX
KEY0
KEY1
KEY2
1407
1409
P
T077
T076
T073
T071
T075
T074
T072
T078
T079
P08'
P07'
P06'
P05'
KEY0
KEY1
KEY2
+F
CDCLED
PB_Info
REC
HSD
54
Pb_Info
Rec_Info
HSD
1601
6601
Backlight
3601
55
OE_LATCH(CDRAB)
SICL(CDSICL)
SILD(CDSILD)
DATA(CDDATA)
PORE(CDRST)
SH_CLK(TRAYSW)
STR_OUTP(TRAYPLUS)
SW_INFO(TRAYMINI3)
NC
CD_OE_LATCH
CD_SICL
SILD
CD_DATA
CD_PORE
CD_SH_CLK
CD_STR_OUTP
CD_SW_INFO

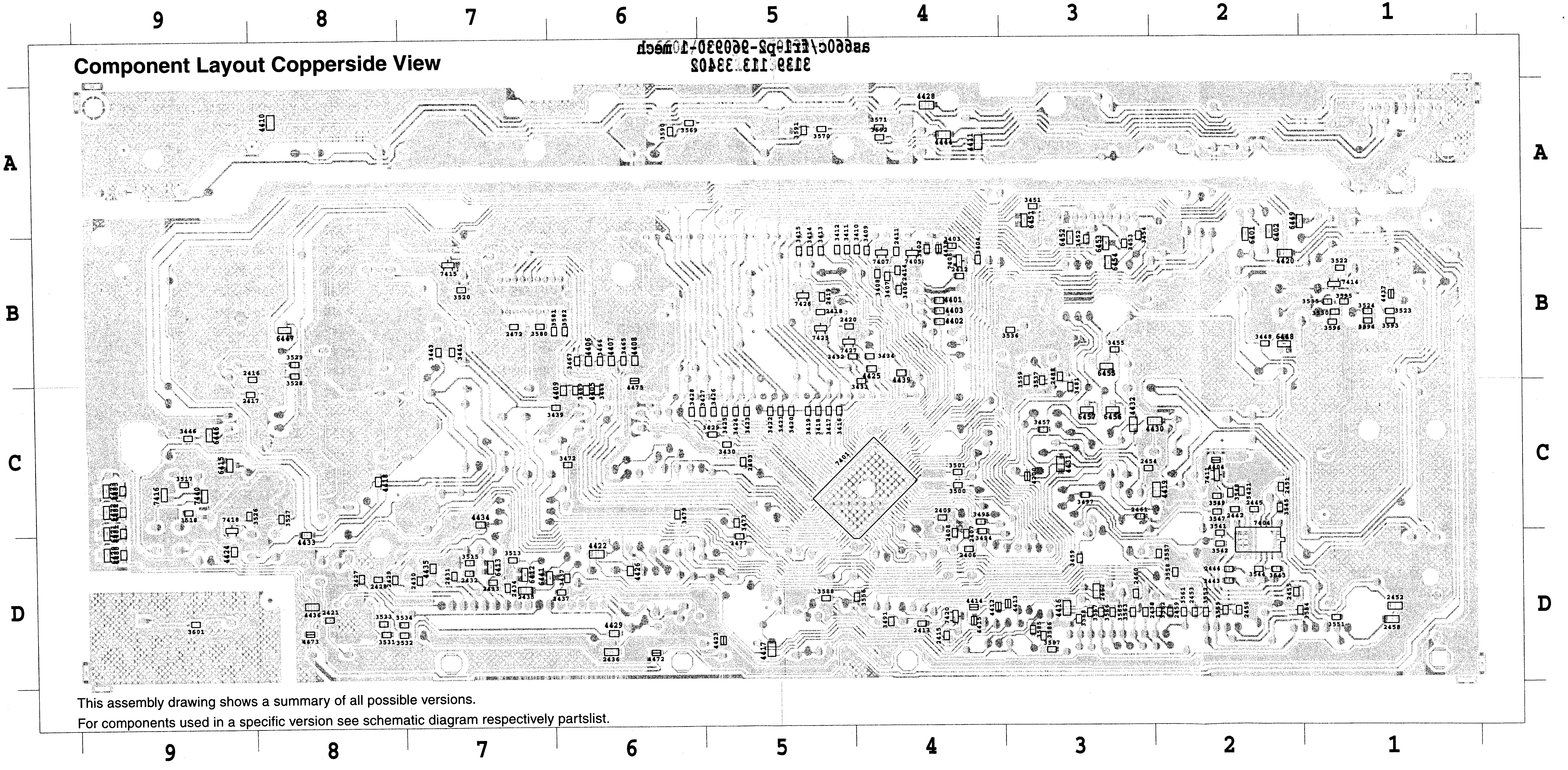
POS.	MIDI 2	MIDI 3
4401	*	*
4402	*	*
4403	*	*
4404	*	*
4405	*	*
4406	*	*
4407	*	*
4408	*	*
4409	*	
4412	*	*
4413		
4414	*	*
4415		
4619	*	
3470		*
3471		*

Ⓒ SMD COMPONENTS

P PROVISION

2403 C 5	2416 B 9	2431 D 7	2444 D 2	2460 D 3	3408 B 4	3418 C 5	3428 C 6	3446 C 9	3466 B 6	3494 D 4	3522 B 1	3533 D 8	3547 C 2	3559 C 3	3571 A 4	3592 A 4	4404 C 2	4414 D 4	4425 B 4	4436 D 8	6402 B 2	6452 B 3	7407 B 4	7440 C 9
2406 D 4	2417 C 9	2432 D 7	2445 C 2	2461 C 3	3409 B 4	3419 C 5	3429 C 5	3448 B 2	3467 B 6	3495 C 4	3523 B 1	3534 D 8	3548 C 2	3561 D 2	3580 B 7	3593 B 1	4405 C 6	4415 D 4	4426 D 6	4437 B 1	6412 D 7	6453 B 3	7411 C 2	
2407 D 4	2418 B 5	2433 D 7	2451 C 2	2462 D 3	3410 B 4	3420 C 5	3430 C 5	3451 A 3	3468 C 6	3497 C 3	3524 B 1	3535 B 1	3549 C 2	3562 D 2	3581 B 6	3594 B 1	4406 B 6	4416 D 3	4428 A 4	4438 B 4	6413 D 7	6454 B 3	7414 B 1	
2408 D 4	2419 B 5	2434 D 7	2452 D 1	2472 B 7	3411 B 5	3421 C 5	3432 B 4	3452 B 3	3469 C 6	3500 C 4	3526 C 9	3536 B 3	3551 D 1	3563 D 3	3582 B 6	3595 B 1	4407 B 6	4417 D 5	4429 D 6	4439 B 4	6415 C 9	6455 B 3	7415 B 7	
2409 C 4	2420 B 5	2435 D 7	2453 D 2	2488 B 3	3412 B 5	3422 C 5	3433 C 4	3453 B 3	3472 C 6	3501 C 4	3527 C 8	3537 C 3	3552 D 2	3565 D 3	3585 D 3	3596 B 1	4408 B 6	4418 C 8	4430 C 2	4444 A 4	6441 D 7	6456 C 3	7416 C 9	
2411 B 4	2421 D 8	2436 D 6	2454 C 3	3402 B 4	3413 B 5	3423 C 5	3434 B 4	3454 B 3	3473 C 5	3513 D 7	3528 B 8	3541 D 2	3554 D 2	3566 D 3	3586 D 3	3601 D 9	4409 C 6	4419 C 2	4431 C 3	4472 D 6	6446 C 9	6457 C 3	7418 C 9	
2412 B 4	2427 D 8	2437 D 6	2455 D 2	3403 B 4	3414 B 5	3424 C 5	3437 D 6	3455 B 3	3477 D 5	3515 D 7	3529 B 8	3542 D 2	3555 D 2	3567 D 3	3587 D 3	4200 C 3	4410 A 8	4420 B 2	4432 C 3	4473 D 8	6447 B 8	7401 C 4	7420 D 4	
2413 D 4	2428 D 8	2438 D 3	2456 D 2	3404 B 4	3415 B 5	3425 C 5	3439 C 6	3457 C 3	3479 C 6	3517 C 9	3530 B 1	3543 D 2	3556 D 4	3568 D 3	3588 D 5	4401 B 4	4411 A 4	4422 D 6	4433 D 8	4475 B 6	6448 B 2	7404 D 2	7425 B 5	
2414 B 4	2429 D 8	2442 C 2	2458 D 1	3406 B 4	3416 C 5	3426 C 5	3441 B 7	3459 D 3	3481 C 3	3518 C 9	3531 D 8	3544 D 2	3557 D 2	3569 A 6	3590 A 6	4402 B 4	4412 D 4	4423 D 5	4434 C 7	5421 C 2	6449 A 2	7405 B 4	7426 B 5	
2415 D 4	2430 D 7	2443 D 2	2459 D 2	3407 B 4	3417 C 5	3427 C 5	3443 B 7	3465 B 6	3491 D 4	3520 B 7	3532 D 8	3545 C 2	3558 D 2	3570 A 5	3591 A 5	4403 B 4	4413 D 3	4424 D 9	4435 D 7	6401 B 2	6451 A 3	7406 B 4	7427 B 5	

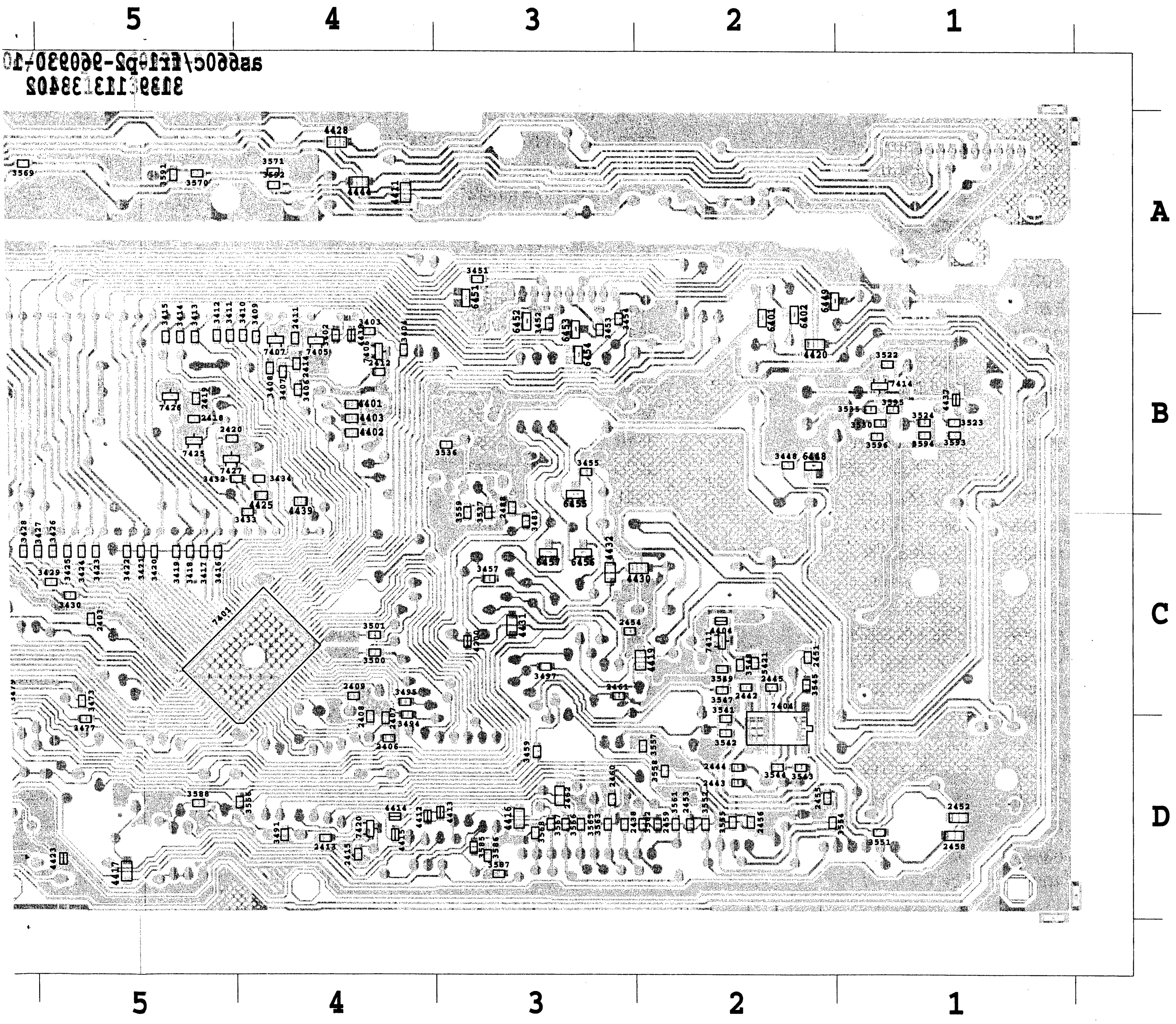
Component Layout Copperside View



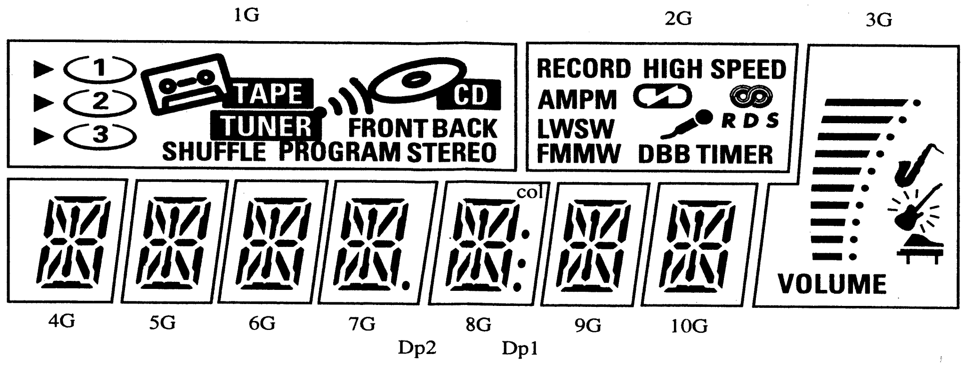
This assembly drawing shows a summary of all possible versions.

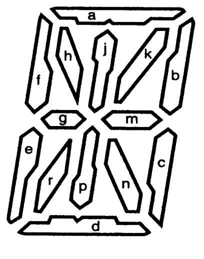
For components used in a specific version see schematic diagram respectively partslist.

3522 B 1	3533 D 8	3547 C 2	3559 C 3	3571 A 4	3592 A 4	4404 C 2	4414 D 4	4425 B 4	4436 D 8	6402 B 2	6452 B 3	7407 B 4	7440 C 9
3523 B 1	3534 D 8	3548 C 2	3561 D 2	3580 B 7	3593 B 1	4405 C 6	4415 D 4	4426 D 6	4437 B 1	6412 D 7	6453 B 3	7411 C 2	
3524 B 1	3535 B 1	3549 C 2	3562 D 2	3581 B 6	3594 B 1	4406 B 6	4416 D 3	4428 A 4	4438 B 4	6413 D 7	6454 B 3	7414 B 1	
3526 C 9	3536 B 3	3551 D 1	3563 D 3	3582 B 6	3595 B 1	4407 B 6	4417 D 5	4429 D 6	4439 B 4	6415 C 9	6455 B 3	7415 B 7	
3527 C 8	3537 C 3	3552 D 2	3565 D 3	3585 D 3	3596 B 1	4408 B 6	4418 C 8	4430 C 2	4444 A 4	6441 D 7	6456 C 3	7416 C 9	
3528 B 8	3541 D 2	3554 D 2	3566 D 3	3586 D 3	3601 D 9	4409 C 6	4419 C 2	4431 C 3	4472 D 6	6446 C 9	6457 C 3	7418 C 9	
3529 B 8	3542 D 2	3555 D 2	3567 D 3	3587 D 3	4200 C 3	4410 A 8	4420 B 2	4432 C 3	4473 D 8	6447 B 8	7401 C 4	7420 D 4	
3530 B 1	3543 D 2	3556 D 4	3568 D 3	3588 D 5	4401 B 4	4411 A 4	4422 D 6	4433 D 8	4475 B 6	6448 B 2	7404 D 2	7425 B 5	
3531 D 8	3544 D 2	3557 D 2	3569 A 6	3590 A 6	4402 B 4	4412 D 4	4423 D 5	4434 C 7	5421 C 2	6449 A 2	7405 B 4	7426 B 5	
3532 D 8	3545 C 2	3558 D 2	3570 A 5	3591 A 5	4403 B 4	4413 D 3	4424 D 9	4435 D 7	6401 B 2	6451 A 3	7406 B 4	7427 B 5	

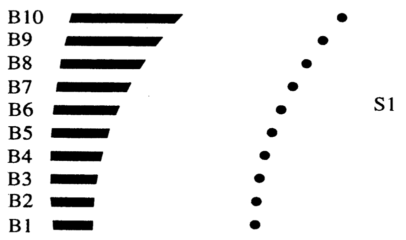


LCD CONNECTION


1G
2G
3G
1
2
3
TAPE
TUNER
CD
FRONT BACK
SHUFFLE PROGRAM STEREO
RECORD HIGH SPEED
AMPM
LWSW
FMMW
RDS
DBB TIMER
VOLUME
col
4G
5G
6G
7G
8G
9G
10G
Dp2
Dp1


a
h
j
k
b
f
g
m
e
r
p
n
c
d

(4G-10G)


B10
B9
B8
B7
B6
B5
B4
B3
B2
B1
S1

(3G)

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G
P1	▷ (1)	**RECORD**	B1	a	a	a	a	a	a	a
P2	▷ (2)	**HIGH SPEED**	B2	h	h	h	h	h	h	h
P3	▷ (3)	**AM**	B3	j , p	j , p	j , p	j , p	j , p	j , p	j , p
P4	**1 2 3**	**PM**	B4	k	k	k	k	k	k	k
P5	⬭ **(1)**	R·D·S	B5	b	b	b	b	b	b	b
P6	⬭ **(2)**	Ƶ	B6	f	f	f	f	f	f	f
P7	⬭ **(3)**	**(**	B7	m	m	m	m	m	m	m
P8	TAPE	**)**	B8	g	g	g	g	g	g	g
P9	TUNER	🎤	B9	c	c	c	c	c	c	c
P10	CD	**LW**	B10	e	e	e	e	e	e	e
P11	**FRONT**	**SW**	**VOLUME S1**	r	r	r	r	r	r	r
P12	**BACK**	**FM**	🎷	n	n	n	n	n	n	n
P13	**SHUFFLE**	**MW**	🎸	d	d	d	d	d	d	d
P14	**PROGRAM**	**DBB**	🎸	-	-	-	Dp2	Dp1	-	-
P15	**STEREO**	**TIMER**	🎹	-	-	-	-	col	-	-

ELECTRICAL PARTS LIST - FRONT BOARD

MISCELLANEOUS

1400	4822 135 00014	FTD Display
1410	4822 276 13114	Tact Switch
1411	4822 276 13114	Tact Switch
1412	4822 276 13114	Tact Switch
1413	4822 276 13114	Tact Switch
1414	4822 276 13114	Tact Switch
1415	4822 276 13114	Tact Switch
1416	4822 276 13114	Tact Switch
1417	4822 276 13114	Tact Switch
1418	4822 276 13114	Tact Switch
1419	4822 276 13114	Tact Switch
1420	4822 276 13114	Tact Switch
1423	4822 276 13114	Tact Switch
1424	4822 276 13114	Tact Switch
1425	4822 276 13114	Tact Switch
1426	4822 276 13114	Tact Switch
1427	4822 276 13114	Tact Switch
1428	4822 276 13114	Tact Switch
1431	4822 276 13114	Tact Switch
1432	4822 276 13114	Tact Switch
1433	4822 276 13114	Tact Switch
1434	4822 276 13114	Tact Switch
1435	4822 276 13114	Tact Switch
1441	4822 276 13114	Tact Switch
1442	4822 276 13114	Tact Switch
1443	4822 276 13114	Tact Switch
1444	4822 276 13114	Tact Switch
1445	4822 276 13114	Tact Switch
1446	4822 276 13114	Tact Switch
1447	4822 276 13114	Tact Switch
1448	4822 276 13114	Tact Switch
1449	4822 276 13114	Tact Switch
1450	4822 276 13114	Tact Switch
1468	4822 101 21261	Rotary Encoder
1499	4822 276 13114	Tact Switch

CAPACITORS

2401	4822 124 41584	100µF 20% 10V
2402	4822 124 41596	22µF 20% 50V
2403	4822 126 13296	100nF 10% 16V
2406	5322 122 32481	15pF 5% 50V
2407	5322 122 32481	15pF 5% 50V
2408	5322 122 32659	33pF 5% 50V
2409	5322 122 32659	33pF 5% 50V
2410	4822 124 41584	100µF 20% 10V
2411	5322 122 32531	100pF 5% 50V
2412	5322 122 32531	100pF 5% 50V
2413	4822 122 33177	10nF 20% 50V
2414	5322 122 32531	100pF 5% 50V
2415	5322 122 13296	100nF 10% 16V
2416	4822 122 33177	10nF 20% 50V
2417	4822 122 33177	10nF 20% 50V
2421	4822 126 13296	100nF 10% 16V
2422	4822 124 41584	100µF 20% 10V
2425	4822 121 51252	470nF 5% 63V
2426	4822 121 51252	470nF 5% 63V
2427	5322 122 34099	470pF 10% 63V
2428	5322 122 34099	470pF 10% 63V
2429	5322 122 34099	470pF 10% 63V
2430	5322 122 34099	470pF 10% 63V
2431	5322 122 34099	470pF 10% 63V
2432	5322 122 34099	470pF 10% 63V
2433	5322 122 34099	470pF 10% 63V
2434	5322 122 34099	470pF 10% 63V
2435	4822 126 14067	470pF 10% 50V.
2436	4822 126 14067	470pF 10% 50V.
2437	5322 122 34099	470pF 10% 63V
2438	4822 126 13296	100nF 10% 16V
2453	5322 122 32452	47pF 5% 63V
2454	5322 122 32452	47pF 5% 63V
2455	5322 122 32452	47pF 5% 63V
2456	5322 122 32452	47pF 5% 63V
2459	5322 122 32452	47pF 5% 63V
2460	5322 122 32452	47pF 5% 63V
2461	5322 122 32452	47pF 5% 63V
2462	4822 122 31772	47pF 2% 63V
2488	4822 122 33175	2,2nF 20% 50V
2499	5322 121 42386	100nF 5% 63V

RESISTORS

3400	4822 116 83864	10k 5% 0,5W
3402	4822 051 10104	100k 2% 0,25W
3403	4822 051 20104	100k 5% 0,1W
3404	4822 051 20104	100k 5% 0,1W
3406	4822 051 10102	1k 2% 0,25W
3407	4822 051 10102	1k 2% 0,25W
3408	4822 051 10102	1k 2% 0,25W
3409	4822 051 10102	1k 2% 0,25W
3410	4822 051 10102	1k 2% 0,25W
3411	4822 051 10102	1k 2% 0,25W
3412	4822 051 10102	1k 2% 0,25W
3413	4822 051 10102	1k 2% 0,25W
3414	4822 051 10102	1k 2% 0,25W
3415	4822 051 10102	1k 2% 0,25W
3416	4822 051 10102	1k 2% 0,25W
3417	4822 051 10102	1k 2% 0,25W
3418	4822 051 10102	1k 2% 0,25W
3419	4822 051 10102	1k 2% 0,25W
3420	4822 051 10102	1k 2% 0,25W
3421	4822 051 10102	1k 2% 0,25W
3422	4822 051 10102	1k 2% 0,25W
3423	4822 051 10102	1k 2% 0,25W
3424	4822 051 10102	1k 2% 0,25W
3425	4822 051 10102	1k 2% 0,25W
3426	4822 051 10102	1k 2% 0,25W
3427	4822 051 10102	1k 2% 0,25W
3428	4822 051 10102	1k 2% 0,25W
3429	4822 051 10102	1k 2% 0,25W
3430	4822 051 10102	1k 2% 0,25W
3431	4822 050 11002	1k 1% 0,4W
3432	4822 051 20104	100k 5% 0,1W
3433	4822 051 20104	100k 5% 0,1W
3434	4822 051 20104	100k 5% 0,1W
3437	4822 117 10833	10k 1% 0,1W
3438	4822 116 83864	10k 5% 0,5W
3439	4822 051 20474	470k 5% 0,1W
3440	4822 116 83864	10k 5% 0,5W
3441	4822 051 20474	470k 5% 0,1W
3442	4822 116 83864	10k 5% 0,5W
3443	4822 051 20474	470k 5% 0,1W
3444	4822 116 52219	330E 5% 0,5W
3445	4822 116 52219	330E 5% 0,5W
3446	4822 051 20331	330E 5% 0,1W
3447	4822 116 52219	330E 5% 0,5W
3448	4822 051 20331	330E 5% 0,1W
3449	4822 116 52219	330E 5% 0,5W
3451	4822 051 20331	330E 5% 0,1W
3452	4822 051 20331	330E 5% 0,1W
3453	4822 051 20331	330E 5% 0,1W
3454	4822 051 20331	330E 5% 0,1W
3455	4822 051 20331	330E 5% 0,1W
3456	4822 116 52219	330E 5% 0,5W
3457	4822 051 20331	330E 5% 0,1W
3459	4822 117 10833	10k 1% 0,1W
3460	4822 116 83864	10k 5% 0,5W
3461	4822 050 11002	1k 1% 0,4W
3462	4822 116 52175	100E 5% 0,5W
3463	4822 116 52175	100E 5% 0,5W
3464	4822 116 52175	100E 5% 0,5W
3465	4822 117 10833	10k 1% 0,1W
3466	4822 117 10833	10k 1% 0,1W
3467	4822 117 10833	10k 1% 0,1W
3468	4822 117 10833	10k 1% 0,1W
3469	4822 117 10833	10k 1% 0,1W
3470	4822 116 83864	10k 5% 0,5W
3471	4822 116 83864	10k 5% 0,5W
3472	4822 117 10833	10k 1% 0,1W
3475	4822 050 11002	1k 1% 0,4W
3477	4822 051 10102	1k 2% 0,25W
3478	4822 116 52298	680k 5% 0,5W
3479	4822 051 20105	1M 5% 0,1W
3480	4822 116 83864	10k 5% 0,5W
3481	4822 051 10102	1k 2% 0,25W
3482	4822 050 11002	1k 1% 0,4W
3483	4822 050 11002	1k 1% 0,4W
3484	4822 050 11002	1k 1% 0,4W
3485	4822 050 11002	1k 1% 0,4W
3486	4822 050 11002	1k 1% 0,4W
3490	4822 050 11002	1k 1% 0,4W
3491	4822 051 20104	100k 5% 0,1W
3493	4822 116 83864	10k 5% 0,5W
3494	4822 117 10833	10k 1% 0,1W
3495	4822 117 11449	2k2 1% 0,1W
3496	4822 050 11002	1k 1% 0,4W
3497	4822 051 10102	1k 2% 0,25W
3498	4822 050 11002	1k 1% 0,4W
3499	4822 050 11002	1k 1% 0,4W
3500	4822 051 10102	1k 2% 0,25W
3501	4822 051 10102	1k 2% 0,25W
3503	4822 050 11002	1k 1% 0,4W
3505	4822 050 11002	1k 1% 0,4W
3506	4822 050 11002	1k 1% 0,4W
3507	4822 116 52263	2k7 5% 0,5W
3508	4822 116 52283	4k7 5% 0,5W
3509	4822 116 83864	10k 5% 0,5W
3510	4822 116 52283	4k7 5% 0,5W
3512	4822 050 11002	1k 1% 0,4W
3513	4822 117 10833	10k 1% 0,1W
3514	4822 050 11002	1k 1% 0,4W
3515	4822 117 10833	10k 1% 0,1W
3516	4822 116 83864	10k 5% 0,5W
3517	4822 051 20473	47k 5% 0,1W
3518	4822 051 20331	330E 5% 0,1W
3519	4822 116 83864	10k 5% 0,5W
3520	4822 117 10833	10k 1% 0,1W
3521	4822 116 83864	10k 5% 0,5W
3522	4822 117 10833	10k 1% 0,1W
3523	4822 051 20331	330E 5% 0,1W
3524	4822 051 20391	390E 5% 0,1W
3525	4822 050 24705	4M7 1% 0,6W
3526	4822 117 10833	10k 1% 0,1W
3527	4822 051 20331	330E 5% 0,1W
3528	4822 117 10833	10k 1% 0,1W
3529	4822 117 10833	10k 1% 0,1W
3530	4822 051 20391	390E 5% 0,1W
3531	4822 117 10833	10k 1% 0,1W
3532	4822 117 10833	10k 1% 0,1W
3533	4822 051 10102	1k 2% 0,25W
3534	4822 051 10102	1k 2% 0,25W
3535	4822 051 20391	390E 5% 0,1W
3536	4822 051 20479	47E 5% 0,1W
3537	4822 051 10102	1k 2% 0,25W
3540	4822 116 52271	33k 5% 0,5W
3552	4822 051 10102	1k 2% 0,25W
3553	4822 050 11002	1k 1% 0,4W
3554	4822 051 10102	1k 2% 0,25W
3555	4822 051 10102	1k 2% 0,25W
3556	4822 117 10833	10k 1% 0,1W
3557	4822 117 10833	10k 1% 0,1W
3558	4822 117 10833	10k 1% 0,1W
3559	4822 051 10102	1k 2% 0,25W
3561	4822 051 10102	1k 2% 0,25W
3562	4822 051 101	
3563	4822 051 101	
3564	4822 050 110	
3565	4822 051 101	
3566	4822 051 101	
3567	4822 051 101	
3568	4822 051 101	
3569	4822 051 203	
3570	4822 051 203	
3571	4822 051 203	
3586	4822 117 108	
3587	4822 117 108	
3588	4822 117 108	
4401	4822 051 200	
4402	4822 051 200	
4403	4822 051 200	
4405	4822 051 200	
4406	4822 051 200	
4407	4822 051 200	
4408	4822 051 200	
4409	4822 051 200	
4410	4822 051 100	
4411	4822 051 100	
4412	4822 051 200	
4414	4822 051 200	
4416	4822 051 100	
4417	4822 051 100	
4418	4822 051 200	
4419	4822 051 100	
4420	4822 051 100	
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4426	4822 051 200	
4427	4822 051 100	
4428	4822 051 100	
4429	4822 051 200	
4430	4822 051 100	
4431	4822 051 100	
4432	4822 051 100	
4433	4822 051 200	
4434	4822 051 200	
4435	4822 051 200	
4436	4822 051 100	
4444	4822 051 100	
4472	4822 051 200	
4473	4822 051 200	
4475	4822 051 200	

COILS & FILTERS

5402	4822 242 709	
5406	4822 157 702	

3428	4822 051 10102	1k 2% 0,25W
3429	4822 051 10102	1k 2% 0,25W
3430	4822 051 10102	1k 2% 0,25W
3431	4822 050 11002	1k 1% 0,4W
3432	4822 051 20104	100k 5% 0,1W
3433	4822 051 20104	100k 5% 0,1W
3434	4822 051 20104	100k 5% 0,1W
3437	4822 117 10833	10k 1% 0,1W
3438	4822 116 83864	10k 5% 0,5W
3439	4822 051 20474	470k 5% 0,1W
3440	4822 116 83864	10k 5% 0,5W
3441	4822 051 20474	470k 5% 0,1W
3442	4822 116 83864	10k 5% 0,5W
3443	4822 051 20474	470k 5% 0,1W
3444	4822 116 52219	330E 5% 0,5W
3445	4822 116 52219	330E 5% 0,5W
3446	4822 051 20331	330E 5% 0,1W
3447	4822 116 52219	330E 5% 0,5W
3448	4822 051 20331	330E 5% 0,1W
3449	4822 116 52219	330E 5% 0,5W
3451	4822 051 20331	330E 5% 0,1W
3452	4822 051 20331	330E 5% 0,1W
3453	4822 051 20331	330E 5% 0,1W
3454	4822 051 20331	330E 5% 0,1W
3455	4822 051 20331	330E 5% 0,1W
3456	4822 116 52219	330E 5% 0,5W
3457	4822 051 20331	330E 5% 0,1W
3459	4822 117 10833	10k 1% 0,1W
3460	4822 116 83864	10k 5% 0,5W
3461	4822 050 11002	1k 1% 0,4W
3462	4822 116 52175	100E 5% 0,5W
3463	4822 116 52175	100E 5% 0,5W
3464	4822 116 52175	100E 5% 0,5W
3465	4822 117 10833	10k 1% 0,1W
3466	4822 117 10833	10k 1% 0,1W
3467	4822 117 10833	10k 1% 0,1W
3468	4822 117 10833	10k 1% 0,1W
3469	4822 117 10833	10k 1% 0,1W
3470	4822 116 83864	10k 5% 0,5W
3471	4822 116 83864	10k 5% 0,5W
3472	4822 117 10833	10k 1% 0,1W
3475	4822 050 11002	1k 1% 0,4W
3477	4822 051 10102	1k 2% 0,25W
3478	4822 116 52298	680k 5% 0,5W
3479	4822 051 20105	1M 5% 0,1W
3480	4822 116 83864	10k 5% 0,5W
3481	4822 051 10102	1k 2% 0,25W
3482	4822 050 11002	1k 1% 0,4W
3483	4822 050 11002	1k 1% 0,4W
3484	4822 050 11002	1k 1% 0,4W
3485	4822 050 11002	1k 1% 0,4W
3486	4822 050 11002	1k 1% 0,4W
3490	4822 050 11002	1k 1% 0,4W
3491	4822 051 20104	100k 5% 0,1W
3493	4822 116 83864	10k 5% 0,5W
3494	4822 117 10833	10k 1% 0,1W
3495	4822 117 11449	2k2 1% 0,1W
3496	4822 050 11002	1k 1% 0,4W
3497	4822 051 10102	1k 2% 0,25W
3498	4822 050 11002	1k 1% 0,4W
3499	4822 050 11002	1k 1% 0,4W
3500	4822 051 10102	1k 2% 0,25W
3501	4822 051 10102	1k 2% 0,25W
3503	4822 050 11002	1k 1% 0,4W
3505	4822 050 11002	1k 1% 0,4W
3506	4822 050 11002	1k 1% 0,4W
3507	4822 116 52263	2k7 5% 0,5W
3508	4822 116 52283	4k7 5% 0,5W
3509	4822 116 83864	10k 5% 0,5W
3510	4822 116 52283	4k7 5% 0,5W
3512	4822 050 11002	1k 1% 0,4W
3513	4822 117 10833	10k 1% 0,1W
3514	4822 050 11002	1k 1% 0,4W
3515	4822 117 10833	10k 1% 0,1W
3516	4822 116 83864	10k 5% 0,5W
3517	4822 051 20473	47k 5% 0,1W
3518	4822 051 20331	330E 5% 0,1W
3519	4822 116 83864	10k 5% 0,5W
3520	4822 117 10833	10k 1% 0,1W
3521	4822 116 83864	10k 5% 0,5W
3522	4822 117 10833	10k 1% 0,1W
3523	4822 051 20331	330E 5% 0,1W
3524	4822 051 20391	390E 5% 0,1W
3525	4822 050 24705	4M7 1% 0,6W
3526	4822 117 10833	10k 1% 0,1W
3527	4822 051 20331	330E 5% 0,1W
3528	4822 117 10833	10k 1% 0,1W
3529	4822 117 10833	10k 1% 0,1W
3530	4822 051 20391	390E 5% 0,1W
3531	4822 117 10833	10k 1% 0,1W
3532	4822 117 10833	10k 1% 0,1W
3533	4822 051 10102	1k 2% 0,25W
3534	4822 051 10102	1k 2% 0,25W
3535	4822 051 20391	390E 5% 0,1W
3536	4822 051 20479	47E 5% 0,1W
3537	4822 051 10102	1k 2% 0,25W
3540	4822 116 52271	33k 5% 0,5W
3552	4822 051 10102	1k 2% 0,25W
3553	4822 050 11002	1k 1% 0,4W
3554	4822 051 10102	1k 2% 0,25W
3555	4822 051 10102	1k 2% 0,25W
3556	4822 117 10833	10k 1% 0,1W
3557	4822 117 10833	10k 1% 0,1W
3558	4822 117 10833	10k 1% 0,1W
3559	4822 051 10102	1k 2% 0,25W
3561	4822 051 10102	1k 2% 0,25W

3562	4822 051 10102	1k 2% 0,25W
3563	4822 051 10102	1k 2% 0,25W
3564	4822 050 11002	1k 1% 0,4W
3565	4822 051 10102	1k 2% 0,25W
3566	4822 051 10102	1k 2% 0,25W
3567	4822 051 10102	1k 2% 0,25W
3568	4822 051 10102	1k 2% 0,25W
3569	4822 051 20331	330E 5% 0,1W
3570	4822 051 20331	330E 5% 0,1W
3571	4822 051 20331	330E 5% 0,1W
3586	4822 117 10833	10k 1% 0,1W
3587	4822 117 10833	10k 1% 0,1W
3588	4822 117 10833	10k 1% 0,1W
4401	4822 051 20008	Chip Jumper 0805
4402	4822 051 20008	Chip Jumper 0805
4403	4822 051 20008	Chip Jumper 0805
4405	4822 051 20008	Chip Jumper 0805
4406	4822 051 20008	Chip Jumper 0805
4407	4822 051 20008	Chip Jumper 0805
4408	4822 051 20008	Chip Jumper 0805
4409	4822 051 20008	Chip Jumper 0805
4410	4822 051 10008	Chip Jumper 1206
4411	4822 051 10008	Chip Jumper 1206
4412	4822 051 20008	Chip Jumper 0805
4414	4822 051 20008	Chip Jumper 0805
4416	4822 051 10008	Chip Jumper 1206
4417	4822 051 10008	Chip Jumper 1206
4418	4822 051 20008	Chip Jumper 0805
4419	4822 051 10008	Chip Jumper 1206
4420	4822 051 10008	Chip Jumper 1206
4422	4822 051 10008	Chip Jumper 1206
4423	4822 051 20008	Chip Jumper 0805
4424	4822 051 20008	Chip Jumper 0805
4425	4822 051 20008	Chip Jumper 0805
4426	4822 051 20008	Chip Jumper 0805
4427	4822 051 10008	Chip Jumper 1206
4428	4822 051 10008	Chip Jumper 1206
4429	4822 051 20008	Chip Jumper 0805
4430	4822 051 10008	Chip Jumper 1206
4431	4822 051 10008	Chip Jumper 1206
4432	4822 051 10008	Chip Jumper 1206
4433	4822 051 20008	Chip Jumper 0805
4434	4822 051 20008	Chip Jumper 0805
4435	4822 051 20008	Chip Jumper 0805
4436	4822 051 10008	Chip Jumper 1206
4444	4822 051 10008	Chip Jumper 1206
4472	4822 051 20008	Chip Jumper 0805
4473	4822 051 20008	Chip Jumper 0805
4475	4822 051 20008	Chip Jumper 0805

COILS & FILTERS

5402	4822 242 70938	X'tal Resonator 32,768kHz
5406	4822 157 70299	Coil 2µ2 10%
5410	5322 242 73697	Ceram Resonator 8MHz
5411	4822 157 71667	Coil 2µ2 10%

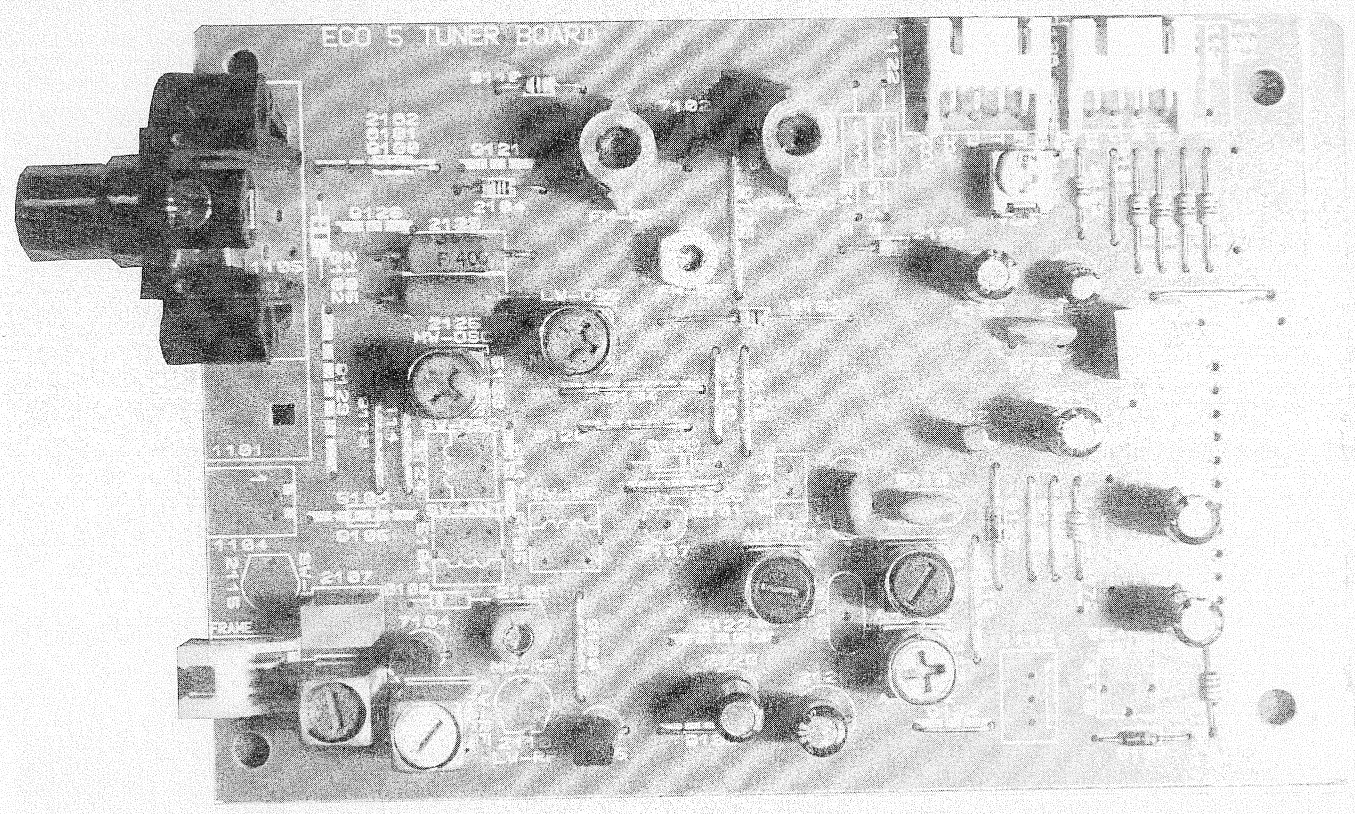
DIODES

6401	5322 130 31928	BAS16
6402	5322 130 31928	BAS16
6403	4822 130 34281	BZX79-C15
6404	4822 130 34281	BZX79-C15
6412	5322 130 31928	BAS16
6413	5322 130 31928	BAS16
6414	4822 130 10791	LTL-1CHGE
6415	5322 130 31928	BAS16
6416	4822 130 10792	LTL-1CHPE
6417	4822 130 10791	LTL-1CHGE
6418	4822 130 10791	LTL-1CHGE
6419	4822 130 10791	LTL-1CHGE
6420	4822 130 10791	LTL-1CHGE
6421	4822 130 10791	LTL-1CHGE
6422	4822 130 10791	LTL-1CHGE
6423	4822 130 10791	LTL-1CHGE
6441	5322 130 31928	BAS16
6444	4822 130 30621	1N4148
6445	4822 130 30621	1N4148
6446	5322 130 31928	BAS16
6447	5322 130 31928	BAS16
6448	5322 130 31928	BAS16
6449	5322 130 31928	BAS16
6451	5322 130 31928	BAS16
6452	5322 130 31928	BAS16
6453	5322 130 31928	BAS16
6454	5322 130 31928	BAS16
6455	5322 130 31928	BAS16
6456	5322 130 31928	BAS16
6457	5322 130 31928	BAS16
6460	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7401	4822 209 15004	TMP87CP71F - 322S51241
7403	4822 209 31508	ST24C01B1
7405	5322 130 42755	BC847C
7406	5322 130 42755	BC847C
7407	5322 130 42755	BC847C
7414	5322 130 42755	BC847C
7415	5322 130 42136	BC848C
7418	5322 130 42136	BC848C
7420	5322 130 42755	BC847C
7428	4822 130 10165	GP1U28XP
7440	4822 130 42513	BC858C

NOTE: Only the parts mentioned in this list are normal service spare parts.


ECO 5 TUNER BOARD
F 400
FM-RF
LW-OSC
MW-OSC
SW-OSC
SW-ANT
SW-RF
FRAME
1101
1104
7102
7107
7154

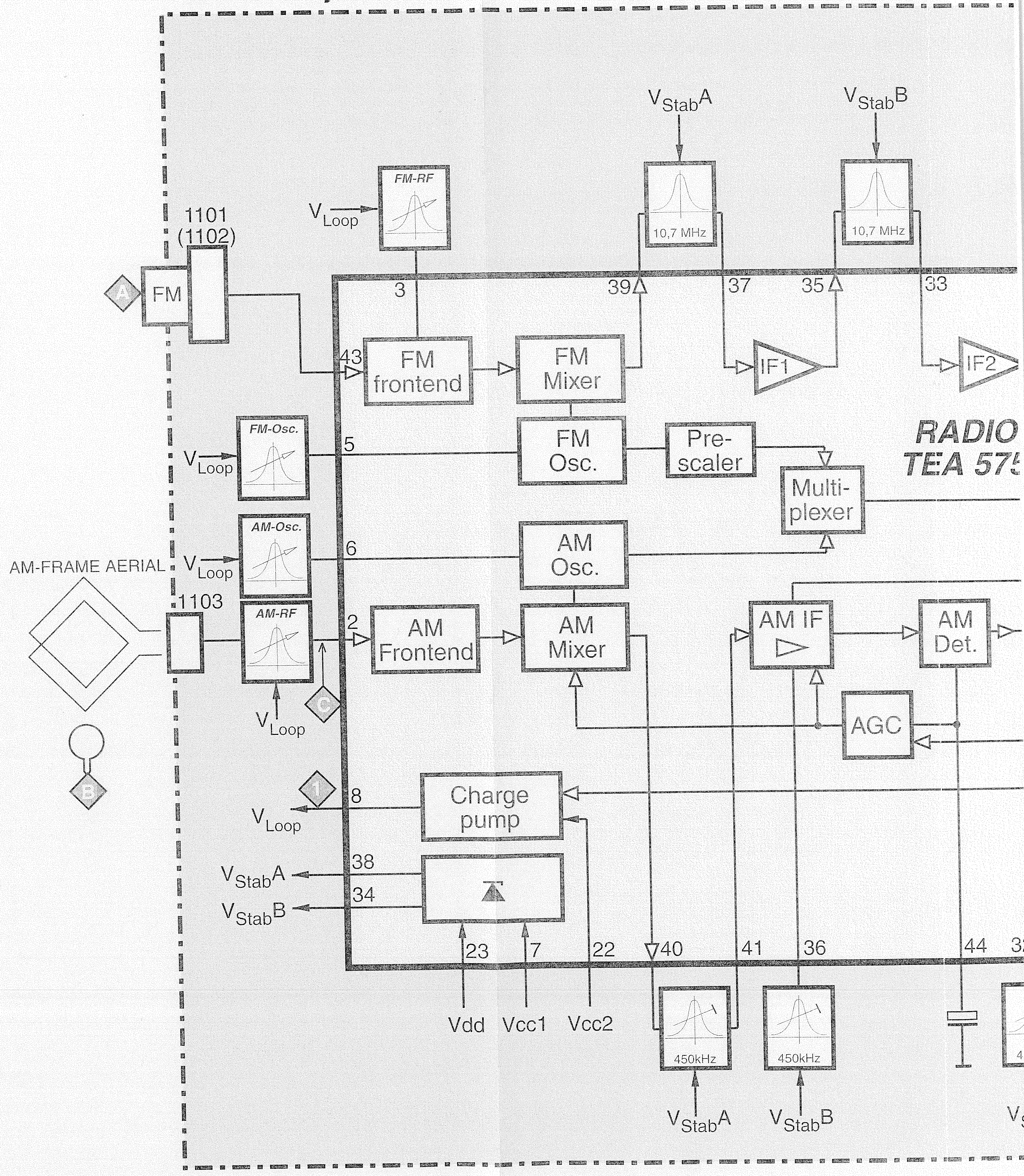
TUNER BOARD ECO5

TABLE OF CONTENTS

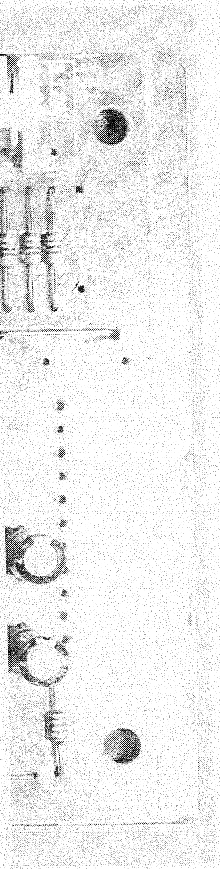
Blockdiagram 7B-1
Adjustmant table 7B-2
Component layout 7B-2
Circuit diagram 7B-3
Partslist 7B-4

BLOCKDIAGRAM

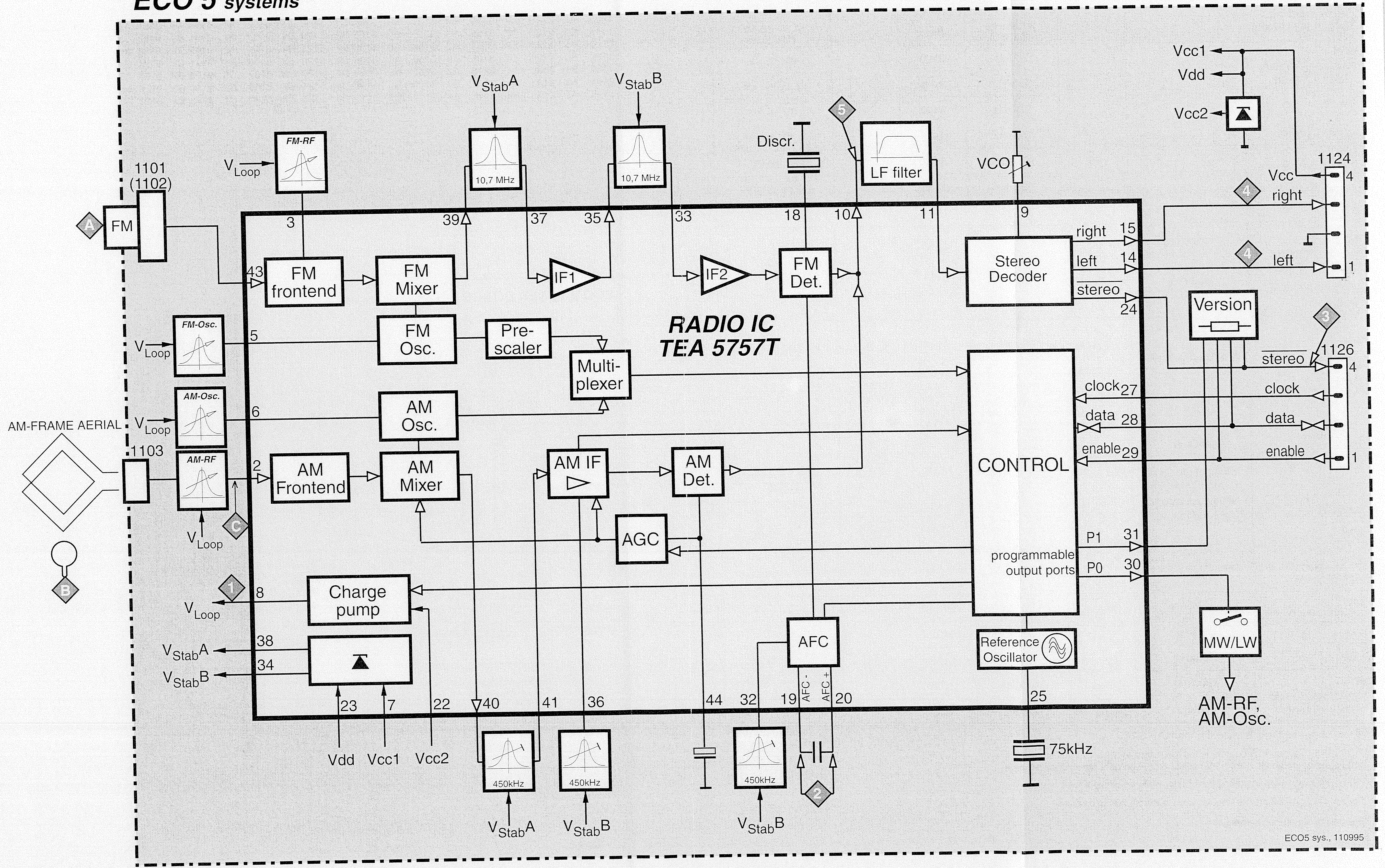
TUNER BOARD ECO 5 systems


AM-FRAME AERIAL
A
B
C
1
FM
1101
(1102)
1103
V Loop
FM-RF
FM-Osc.
AM-Osc.
AM-RF
V Stab A
V Stab B
10,7 MHz
10,7 MHz
3
39
37
35
33
43
5
6
2
8
38
34
23
7
22
40
41
36
44
FM frontend
FM Mixer
FM Osc.
Pre-scaler
Multi-plexer
IF1
IF2
RADIO
TEA 575
AM Osc.
AM Frontend
AM Mixer
AM IF
AM Det.
AGC
Charge pump
Vdd
Vcc1
Vcc2
450kHz
450kHz

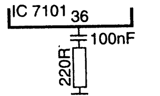
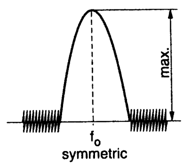
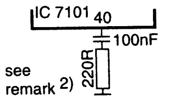
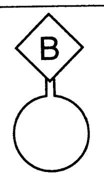
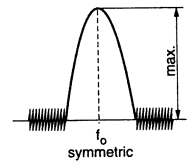
BLOCKDIAGRAM



TUNER BOARD
ECO 5 systems


V$_{Stab}$A
V$_{Stab}$B
Discr.
VCO
LF filter
Vcc1
Vdd
Vcc2
1124
Vcc
right
left
4
1
FM-RF
V$_{Loop}$
10,7 MHz
10,7 MHz
1101
(1102)
FM
A
3
39
37
35
33
18
10
11
9
5
43
FM frontend
FM Mixer
IF1
IF2
FM Det.
Stereo Decoder
right 15
left 14
stereo 24
FM-Osc.
5
FM Osc.
Pre-scaler
Multi-plexer
RADIO IC
TEA 5757T
Version
3
1126
stereo
clock
data
enable
AM-Osc.
AM-FRAME AERIAL
6
AM Osc.
clock 27
data 28
enable 29
CONTROL
1103
AM-RF
2
AM Frontend
AM Mixer
AM IF
AM Det.
AGC
C
B
P1 31
P0 30
programmable output ports
1
8
Charge pump
MW/LW
AM-RF, AM-Osc.
38
34
23
7
22
40
41
36
44
32
19
AFC
AFC -
AFC +
20
Reference Oscillator
25
75kHz
Vdd
Vcc1
Vcc2
450kHz
450kHz
450kHz
2
ECO5 sys., 110995

TUNER ADJUSTMENT TABLE (ECO5 FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	◇1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	◇A mod=1kHz Δf=±22.5kHz	108MHz	2155	◇4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	◇A	98MHz	3142	◇3	152kHz ±1kHz 1)
AM IF						
MW	450kHz connect pin 26 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	◇C Δf=±15kHz V_{RF} = 3mV	 IC 7101 36 100nF 220R	5111	◇4	 max. fo symmetric
			see remark 2)  IC 7101 40 100nF 220R	5112		
AM AFC **MW**		◇C continuous wave V_{RF} = 10mV		5114	◇2	0 ± 2 mV DC
AM RF 3)						
MW 4) FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	◇B  Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	◇4	 max. fo symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz		560kHz	5102		

ECO5, 270896

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

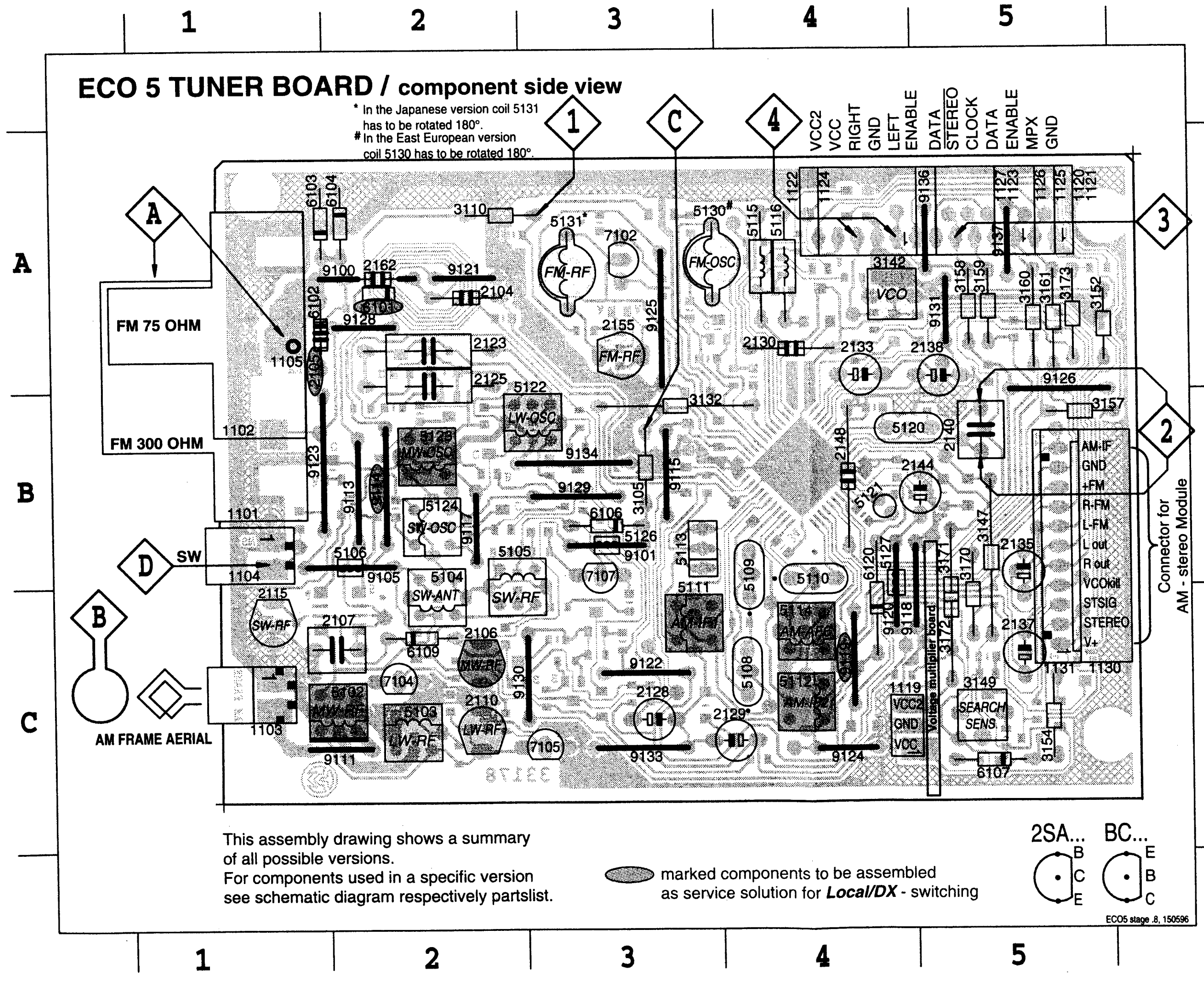
3) For AM RF adjustments the original frame antenna has to be used !

4) MW has to be aligned before LW.

↕ Repeat

1101	A1	2106	C2	2137	C5	3147	B5	3172	C5	5112	C4	5127	B4	7102	A3	9117	B2	9129	B3
1102	A1	2107	C2	2138	A5	3149	C5	3173	A5	5113	B3	5130	A3	7104	C2	9118	B4	9130	C3
1103	C1	2110	C2	2140	B5	3152	A5	5102	C2	5114	C4	5131	A3	7105	C3	9119	C4	9131	A5
1104	B1	2115	C1	2144	B5	3154	C5	5103	C2	5115	A4	6101	A2	7107	B3	9120	B4	9133	C3
1105	A1	2123	A2	2148	B4	3157	B5	5104	C2	5116	A4	6102	A1	9100	A2	9121	A2	9134	B3
1119	C5	2125	A2	2155	A3	3158	A5	5105	B2	5120	B4	6103	A1	9101	B3	9122	C3	9136	A5
1120	A5	2128	C3	2162	A2	3159	A5	5106	B2	5121	B4	6104	A2	9105	B2	9123	B1	9137	A5
1130	B5	2129	C4	3105	B3	3160	A5	5108	C4	5122	B3	6106	B3	9111	C2	9124	C4		
1131	B5	2130	A4	3110	A2	3161	A5	5109	B4	5123	B2	6107	C5	9113	B2	9125	A3		
2104	A2	2133	A4	3132	B3	3170	C5	5110	B4	5124	B2	6109	C2	9114	B2	9126	B5		
2105	A1	2135	B5	3142	A4	3171	C5	5111	C3	5126	B3	6120	C4	9115	B3	9128	A2		

2101	C4	2119	B4
2102	C4	2120	B4
2103	C3	2122	B3
2108	A4	2124	A5
2109	A4	2126	C2
2112	B5	2127	C2
2113	A4	2131	C2
2114	A4	2131	C1
2116	B3	2134	C1
2117	A3	2136	B1
2118	B4	2139	B2



ECO 5 TUNER BOARD / component side view

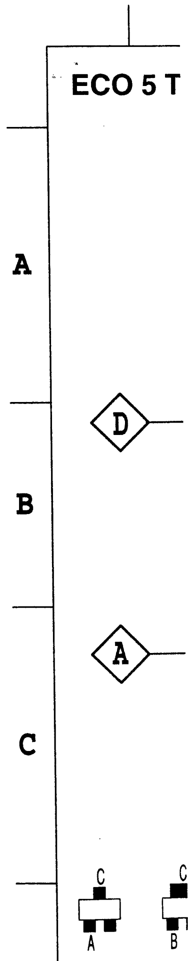
* In the Japanese version coil 5131 has to be rotated 180°.
# In the East European version coil 5130 has to be rotated 180°.

1
2
3
4
5
A
B
C
◇1
◇C
◇4
◇3
◇2
◇A
◇D
◇B
VCC2
VCC
RIGHT
GND
LEFT
ENABLE
DATA
STEREO
CLOCK
DATA
ENABLE
MPX
GND
FM 75 OHM
FM 300 OHM
SW
AM FRAME AERIAL
FM-RF
FM-OSC
VCO
MW-OSC
LW-OSC
SW-OSC
SW-ANT
SW-RF
MW-RF
LW-RF
AM-IF
GND
+FM
R-FM
L-FM
L out
R out
VCOkill
STSIG
STEREO
V+
Connector for AM - stereo Module
Voltage multiplier board
VCC2
GND
VCC
SEARCH SENS.
2SA...
BC...
B
C
E
E
B
C

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

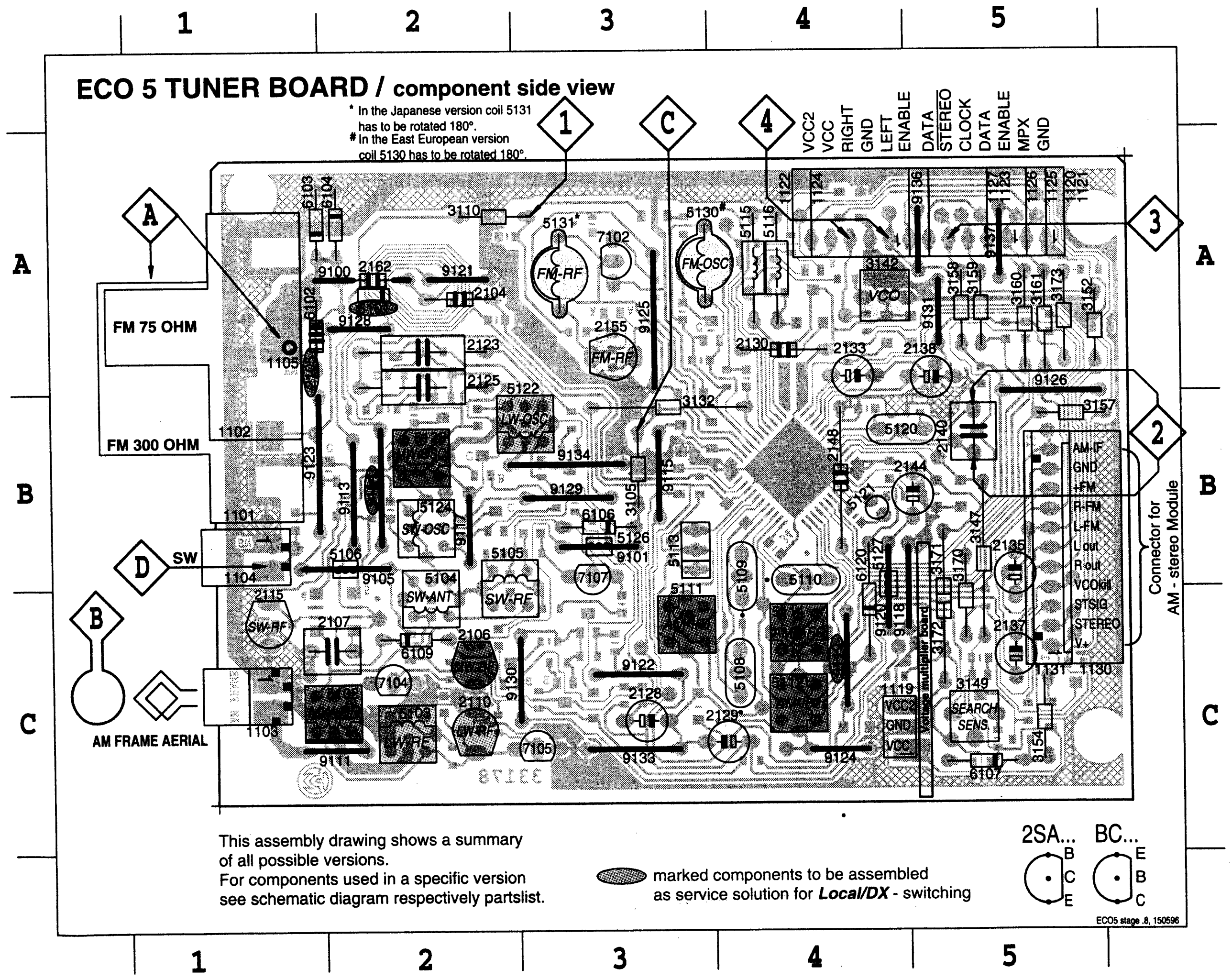
▨ marked components to be assembled as service solution for ***Local/DX*** - switching

ECO5 stage .8, 150596



ECO 5 T
A
B
C
◇D
◇A
C
C
A
B

1101	A1	2106	C2	2137	C5	3147	B5	3172	C5	5112	C4	5127	B4	7102	A3	9117	B2	9129	B3
1102	A1	2107	C2	2138	A5	3149	C5	3173	A5	5113	B3	5130	A3	7104	C2	9118	B4	9130	C3
1103	C1	2110	C2	2140	B5	3152	A5	5102	C2	5114	C4	5131	A3	7105	C3	9119	C4	9131	A5
1104	B1	2115	C1	2144	B5	3154	C5	5103	C2	5115	A4	6101	A2	7107	B3	9120	B4	9133	C3
1105	A1	2123	A2	2148	B4	3157	B5	5104	C2	5116	A4	6102	A1	9100	A2	9121	A2	9134	B3
1119	C5	2125	A2	2155	A3	3158	A5	5105	B2	5120	B4	6103	A1	9101	B3	9122	C3	9136	A5
1120	A5	2128	C3	2162	A2	3159	A5	5106	B2	5121	B4	6104	A2	9105	B2	9123	B1	9137	A5
1130	B5	2129	C4	3105	B3	3160	A5	5108	C4	5122	B3	6106	B3	9111	C2	9124	C4		
1131	B5	2130	A4	3110	A2	3161	A5	5109	B4	5123	B2	6107	C5	9113	B2	9125	A3		
2104	A2	2133	A4	3132	B3	3170	C5	5110	B4	5124	B2	6109	C2	9114	B2	9126	B5		
2105	A1	2135	B5	3142	A4	3171	C5	5111	C3	5126	B3	6120	C4	9115	B3	9128	A2		



ECO 5 TUNER BOARD / component side view

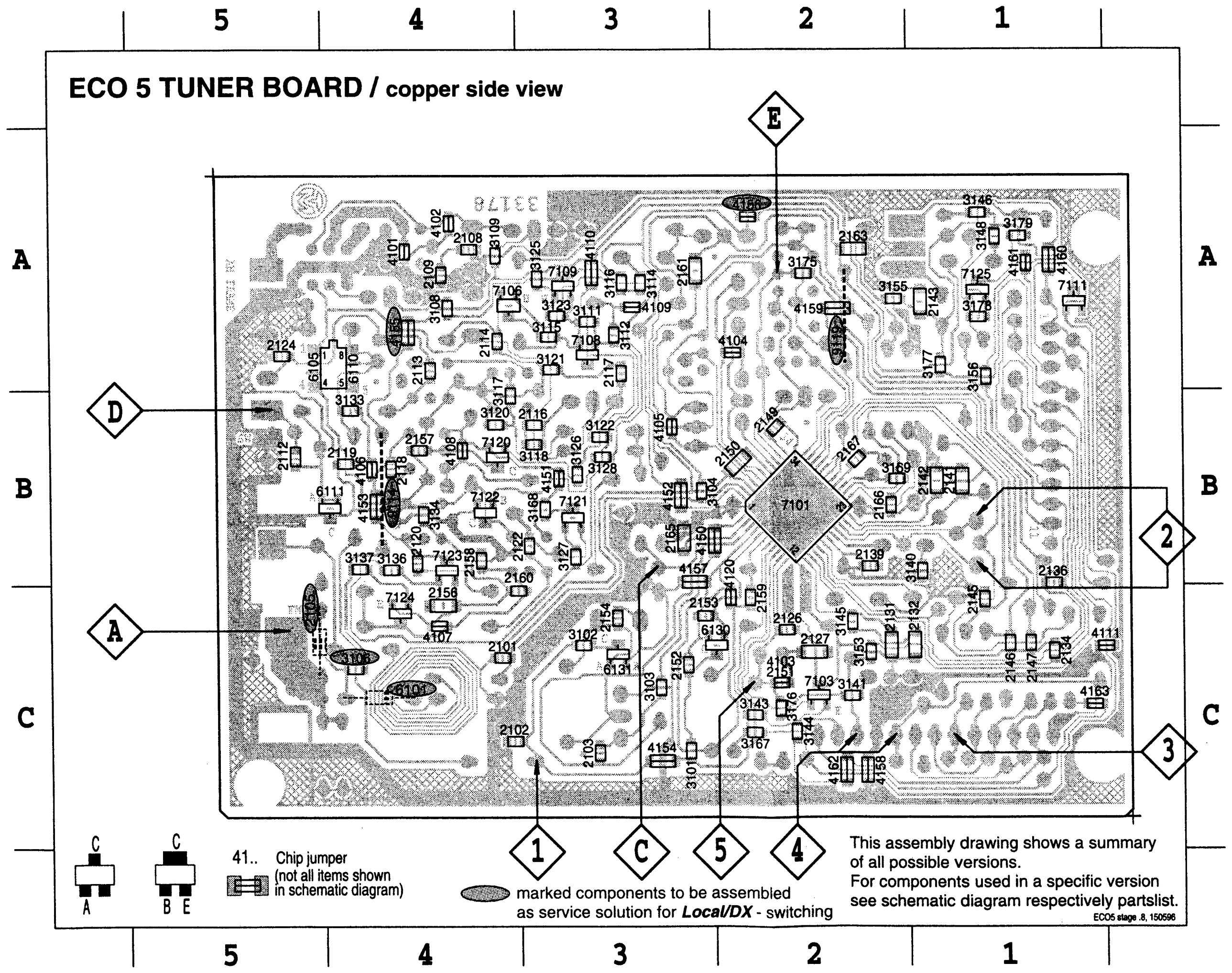
* In the Japanese version coil 5131 has to be rotated 180°.
# In the East European version coil 5130 has to be rotated 180°.

1
2
3
4
5
A
B
C
FM 75 OHM
FM 300 OHM
SW
AM FRAME AERIAL
FM-RF
FM-OSC
VCO
MW-OSC
SW-OSC
SW-ANT
SW-RF
SEARCH SENS
VCC2
VCC
RIGHT
GND
LEFT
ENABLE
DATA
STEREO
CLOCK
DATA
ENABLE
MPX
GND
AM-IF
GND
+FM
R-FM
L-FM
L out
R out
VCOKill
STSIG
STEREO
V+
Connector for AM - stereo Module
2SA...
BC...
B
C
E
ECO5 stage .8, 150596

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

● marked components to be assembled as service solution for *Local/DX* - switching

2101	C4	2119	B4	2141	B1	2154	C3	3101	C3	3116	A3	3133	B4	3153	C2	4101	A4	4120	C2	4160	A1	7109	A3
2102	C4	2120	B4	2142	B1	2156	C4	3102	C3	3117	B4	3134	B4	3155	A2	4102	A4	4150	B2	4161	A1	7111	A1
2103	C3	2122	B3	2143	A1	2157	B4	3103	C3	3118	B3	3136	B4	3156	A1	4103	C2	4151	B3	6105	A4	7120	B4
2108	A4	2124	A5	2145	C1	2158	B4	3104	B3	3120	B4	3137	B4	3167	C2	4104	A2	4152	B3	6110	A4	7121	B3
2109	A4	2126	C2	2146	C1	2159	C2	3106	C4	3121	A3	3140	B1	3168	B3	4105	B3	4153	B4	6111	B4	7122	B4
2112	B5	2127	C2	2147	C1	2160	C4	3108	A4	3122	B3	3141	C2	3169	B2	4106	B4	5154	C3	6130	C2	7123	B4
2113	A4	2131	C2	2149	B2	2161	A3	3109	A3	3123	A3	3143	C2	3175	A2	4107	C4	4155	A4	6131	C3	7124	C4
2114	A4	2131	C1	2150	B2	2163	A2	3111	A3	3125	A3	3144	C2	3176	C2	4108	B4	4156	A2	7101	B2	7125	A1
2116	B3	2134	C1	2151	C2	2165	B3	3112	A3	3126	B3	3145	C2	3177	A1	4109	A3	4157	B3	7103	C2	4162	C2
2117	A3	2136	B1	2152	C3	2166	B2	3114	A3	3127	B3	3146	A1	3178	A1	4110	A3	4158	C2	7106	A4		
2118	B4	2139	B2	2153	C3	2167	B2	3115	A3	3128	B3	3148	A1	3179	A1	4111	C1	4159	A2	7108	A3		



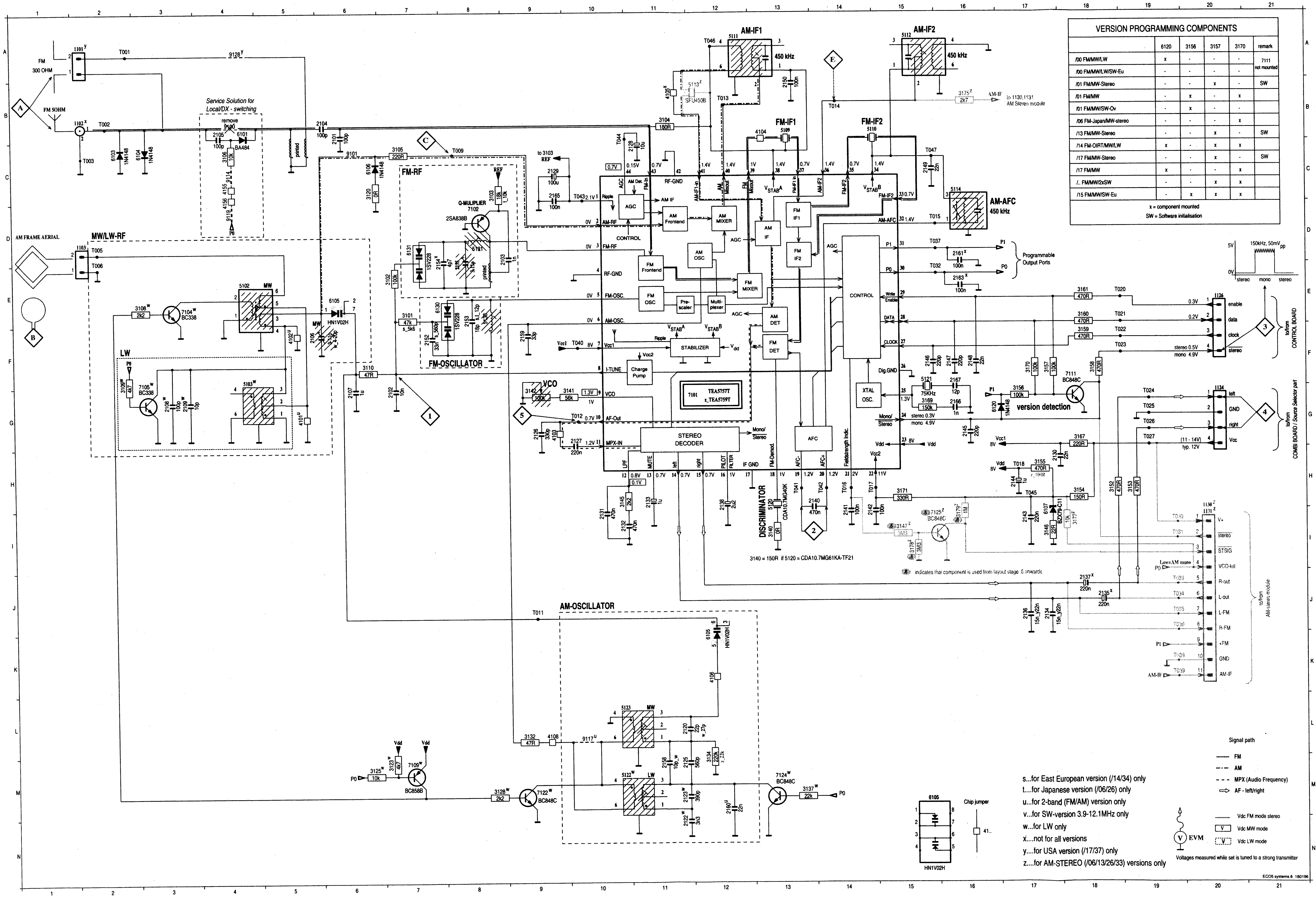
ECO 5 TUNER BOARD / copper side view

5
4
3
2
1
A
B
C
E
D
7101
C
A
B E
41..
Chip jumper (not all items shown in schematic diagram)
ECO5 stage .8, 150596

● marked components to be assembled as service solution for *Local/DX* - switching

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER BOARD ECO5 / Systems


AM-IF1
AM-IF2
FM-IF1
FM-IF2
AM-AFC 450 kHz
FM-RF
FM-OSCILLATOR
MW/LW-RF
LW
AM-OSCILLATOR
AM FRAME AERIAL
FM 300 OHM
FM 50HM
Service Solution for Local/DX - switching
remove 9100
Q-MULTIPLIER 7102
VCO
version detection
STEREO DECODER
CONTROL
XTAL OSC.
STABILIZER
Charge Pump
DISCRIMINATOR
7101 TEA5757T z_TEA5759T
3140 = 150R if 5120 = CDA10.7MG61KA-TF21
Programmable Output Ports
to/from CONTROL BOARD
to/from COMBI BOARD / Source Selector part
to/from AM-stereo module
enable
data
clock
stereo
left
GND
right
Vcc
150kHz, 50mV pp
indicates that component is used from layout stage 6 onwards
Chip jumper
HN1V02H
ECO5 systems.6 180196

VERSION PROGRAMMING COMPONENTS

	6120	3156	3157	3170	remark
/00 FM/MW/LW	x	-	-	-	7111 not mounted
/00 FM/MW/LW/SW-Eu	-	-	-	-	
/01 FM/MW-Stereo	-	-	x	-	SW
/01 FM/MW	-	x	-	x	
/01 FM/MW/SW-Ov	-	x	-	-	
/06 FM-Japan/MW-stereo	-	-	-	x	
/13 FM/MW-Stereo	-	-	x	-	SW
/14 FM-OIRT/MW/LW	x	-	x	x	
/17 FM/MW-Stereo	-	-	x	-	SW
/17 FM/MW	x	-	-	x	
/.. FM/MW/2xSW	-	-	x	x	
/15 FM/MW/SW-Eu	-	x	x	x	

x = component mounted

SW = Software initialisation

s...for East European version (/14/34) only
t....for Japanese version (/06/26) only
u...for 2-band (FM/AM) version only
v...for SW-version 3.9-12.1MHz only
w...for LW only
x....not for all versions
y....for USA version (/17/37) only
z....for AM-STEREO (/06/13/26/33) versions only

Signal path

- FM
- AM
- MPX (Audio Frequency)
- AF - left/right

Vdc FM mode stereo

Vdc MW mode

Vdc LW mode

EVM

Voltages measured while set is tuned to a strong transmitter

1101	A 1
1102	B 2
1103	D 2
1124	G20
1126	E20
1130	I20
1131	I20
2101	C 6
2102	G 7
2103	D 9
2104	B 6
2106	F 5
2107	G 6
2108	G 3
2109	G 3
2120	L11
2122	N11
2123	M11
2125	M11
2126	G 9
2127	G10
2128	C11
2129	C 9
2130	H17
2131	I10
2132	I10
2133	H11
2134	J17
2135	J18
2136	J17
2137	J18
2138	H12
2140	H14
2141	H14
2142	H14
2143	I17
2144	H17
2145	G16
2146	F15
2147	F16
2148	F16
2149	C15
2150	B13
2152	F 7
2153	E 8
2154	E 7
2155	D 8
2158	M11
2159	F 9
2160	M12
2161	D16
2163	E16
2165	C 9
2166	G16
2167	F16
3101	E 7
3102	E 7
3103	C 8
3104	B11
3105	C 7
3108	E 3
3109	F 2
3110	F 6
3120	C 6
3123	M 7
3125	M 6
3128	M 8
3132	L 9
3134	M12
3137	M13
3140	I13
3141	G10
3142	G 9
3145	H10
3146	I17
3147	I15
3152	H18
3153	H19
3154	H18
3155	H17
3156	G17
3157	F17
3158	F18
3159	F18
3160	E18
3161	E18
3167	G18
3169	G15
3170	F17
3171	H15
3175	B16
3177	I18
3178	I15
3179	I16
4101	G 5
4102	F 5
4103	G 9
4104	B13
4105	B11
4106	K12
4108	L 9
5102	E 4
5103	F 4
5109	B13
5110	B14
5111	A13
5112	A15
5113	B12
5114	C16
5120	H13
5121	F15
5122	M11
5123	L11
5130	E 8
5131	D 8
6103	C 2
6104	C 3
6105	K12
6105	E 6
6106	C 6
6107	H17
6120	G16
6130	E 7
6131	D 7
7101	G11
7102	D 8
7104	E 3
7105	F 2
7109	M 7
7111	F18
7122	M 9
7124	M13
7125	I16
9100	B 4
9101	C 6
9117	L10
9128	A 4

MISCELLANEOUS

1101	4822 267 31505	SOCKET 2P CLICKFIT (/14)
1102	4822 267 10283	SOCKET COAXIAL 75Ω

CAPACITORS

2101	5322 122 32531	100pF 5% 50V
2102	4822 122 33177	10nF 20% 50V
2103	5322 122 34123	1nF 10% 50V
2104	4822 122 33195	100pF 10% 50V
2106	4822 125 50355	TRIMCAP. 4-20pF (/00,/17)
2106	4822 125 60101	TRIMCAP. 3-11pF (/01,/14)
2107	4822 121 51319	1µF 10% 63V
2108	5322 122 32531	100pF 5% 50V (/00,/17)
2109	5322 122 32448	10pF 5% 50V (/00,/17)
2120	5322 122 31946	27pF 5% 63V (/00,/17)
2120	5322 122 32658	22pF 5% 50V (/01,/14)
2122	4822 122 33891	3.3nF 10% 63V (/00,/17)
2123	4822 121 51254	390pF 1% 400V (/00,/17)
2125	4822 121 51381	560pF 5% 400V
2126	5322 122 31863	330pF 5% 50V
2127	4822 122 32927	220nF +80-20% 50V
2128	4822 124 41579	10µF 20% 50V
2129	4822 124 41584	100µF 20% 10V
2130	4822 126 11585	22nF +80-20% 25V
2131	4822 122 33325	470nF 16V
2132	4822 122 33325	470nF 16V
2133	4822 124 40242	1µF 20% 63V
2134	4822 122 33128	15nF 10% 63V
2134	5322 122 32654	22nF 10% 63V (/14)
2135	4822 124 40746	0.22µF 20% 63V
2136	4822 122 33128	15nF 10% 63V
2136	5322 122 32654	22nF 10% 63V (/14)
2137	4822 124 40746	0.22µF 20% 63V
2138	4822 124 41576	2.2µF 20% 50V
2140	4822 121 51252	470nF 5% 63V
2141	4822 122 31947	100nF 20% 63V
2142	4822 122 31947	100nF 20% 63V
2143	4822 122 32927	220nF +80-20% 50V
2144	4822 124 40242	1µF 20% 63V
2145	4822 122 33575	220pF 5% 50V
2146	4822 122 33575	220pF 5% 50V
2147	4822 122 33575	220pF 5% 50V
2148	4822 126 11585	22nF +80-20% 25V
2149	5322 122 32654	22nF 10% 63V
2150	4822 122 31947	100nF 20% 63V

CAPACITORS

2152	5322 116 80853	560pF 5% 63V (/17)
2152	4822 122 33342	33nF 10% 63V
2153	4822 122 32139	12pF 2% 63V (/17)
2153	4822 126 13689	18pF 1% 63V
2155	4822 125 60101	3P0-11pF N45 100V
2158	5322 122 32448	10pF 5% 50V (/00,/17)
2159	5322 122 32659	33pF 5% 50V
2160	5322 122 32654	22nF 10% 63V (/01,/14)
2161	4822 122 31947	100nF 20% 63V (/00,/17)
2163	4822 122 31947	100nF 20% 63V (/00,/17)
2165	4822 122 31947	100nF 20% 63V
2166	5322 122 34123	1nF 10% 50V
2167	4822 122 32139	12pF 2% 63V

RESISTORS

3101	4822 051 20562	5k6 5% 0.1W (/17)
3101	4822 051 20473	47k 5% 0.1W
3102	4822 051 20104	100k 5% 0.1W
3103	4822 051 20183	18k 5% 0.1W
3104	4822 051 20181	180Ω 5% 0.1W
3105	4822 116 52215	220Ω 5% 0.5W
3108	4822 051 20222	2k2 5% 0.1W (/00,/17)
3109	4822 051 20472	4k7 5% 0.1W (/00,/17)
3110	4822 116 52195	47Ω 5% 0.5W
3123	4822 051 20472	4k7 5% 0.1W (/00,/17)
3125	4822 051 20103	10k 5% 0.1W (/00,/17)
3128	4822 051 20222	2k2 5% 0.1W (/00,/17)
3132	4822 116 52195	47Ω 5% 0.5W
3134	4822 051 20224	220k 5% 0.1W
3137	4822 051 20223	22k 5% 0.1W (/00,/17)
3140	4822 051 20008	0Ω Jumper
3140	4822 117 10353	150Ω 1% 0.1W
3141	4822 051 20563	56k 5% 0.1W
3142	4822 100 11163	100k 30%LIN 0.1W
3145	4822 051 20222	2k2 5% 0.1W
3146	4822 051 20229	22Ω 5% 0.1W
3152	4822 116 52224	470Ω 5% 0.5W
3153	4822 051 20471	470Ω 5% 0.1W
3154	4822 116 52211	150Ω 5% 0.5W
3155	4822 051 20471	470Ω 5% 0.1W
3156	4822 051 20104	100k 5% 0.1W (/01)
3157	4822 116 52234	100k 5% 0.5W (/17)
3158	4822 116 52224	470Ω 5% 0.5W
3159	4822 116 52224	470Ω 5% 0.5W

RESISTORS

3160	4822 116 52224	470Ω 5% 0.5W
3161	4822 116 52224	470Ω 5% 0.5W
3167	4822 051 20221	220Ω 5% 0.1W
3169	4822 051 20154	150k 5% 0.1W
3170	4822 116 52234	100k 5% 0.5W (not for /00)
3171	4822 116 52219	330Ω 5% 0.5W

JUMPER

4101	4822 051 20008	0Ω Jumper (/01,/14)
4102	4822 051 20008	0Ω Jumper (/01,/14)
4103	4822 051 20008	0Ω Jumper
4104	4822 051 20008	0Ω Jumper
4105	4822 051 20008	0Ω Jumper
4106	4822 051 20008	0Ω Jumper
4108	4822 051 20008	0Ω Jumper
4111	4822 051 20008	0Ω Jumper
4120	4822 051 20008	0Ω Jumper
4150	4822 051 10008	0Ω 5% 0.25W
4151	4822 051 20008	0Ω Jumper (/00,/17)
4152	4822 051 10008	0Ω 5% 0.25W
4153	4822 051 10008	0Ω 5% 0.25W
4154	4822 051 10008	0Ω 5% 0.25W
4155	4822 051 10008	0Ω 5% 0.25W (/00,/17)
4156	4822 051 20008	0Ω Jumper (/00,/17)
4157	4822 051 10008	0Ω 5% 0.25W
4158	4822 051 10008	0Ω 5% 0.25W
4159	4822 051 10008	0Ω 5% 0.25W

COILS

5102	4822 157 71634	RF-COIL MW
5103	4822 157 71635	RF-COIL LW
5122	4822 157 60517	OSC. COIL LW
5123	4822 157 60517	OSC. COIL MW
5130	4822 156 30947	RF-COIL 1.5 T
5131	4822 156 30947	RF-COIL 1.5 T

CRYSTALS/FILTERS

5109	4822 242 70665	Ceram Filter 10.7MHZ
5110	4822 242 70665	Ceram Filter 10.7MHZ
5111	4822 158 60511	AM-IF Filter 450KHZ
5112	4822 157 70302	AM-IF Filter 450KHZ
5114	4822 157 71637	AM-AFC Filter 450KHZ
5120	4822 242 82065	CER.DISCRIMINATOR
5120	4822 242 10251	CER.DISCRIMINATOR

CRYSTALS/FILTERS

5121	4822 242 10261	QUARTZ 75KHZ

DIODES

6103	4822 130 30621	1N4148
6104	4822 130 30621	1N4148
6105	4822 130 83075	HN1V02H. VARICAP.
6106	4822 130 30621	1N4148
6107	4822 130 34488	BZX79-C11
6120	4822 130 30621	1N4148
6130	4822 130 82833	1SV228
6131	4822 130 82833	1SV228

INTERGRATED CIRCUITS

7101	4822 209 90924	TEA5757H/V1.RADIO IC

TRANSISTORS

7102	4822 130 60093	2SA838B
7104	5322 130 44779	BC338-40
7105	5322 130 44779	BC338-40
7109	5322 130 41983	BC858B
7111	5322 130 42136	BC848C
7122	5322 130 42136	BC848C
7124	5322 130 42136	BC848C

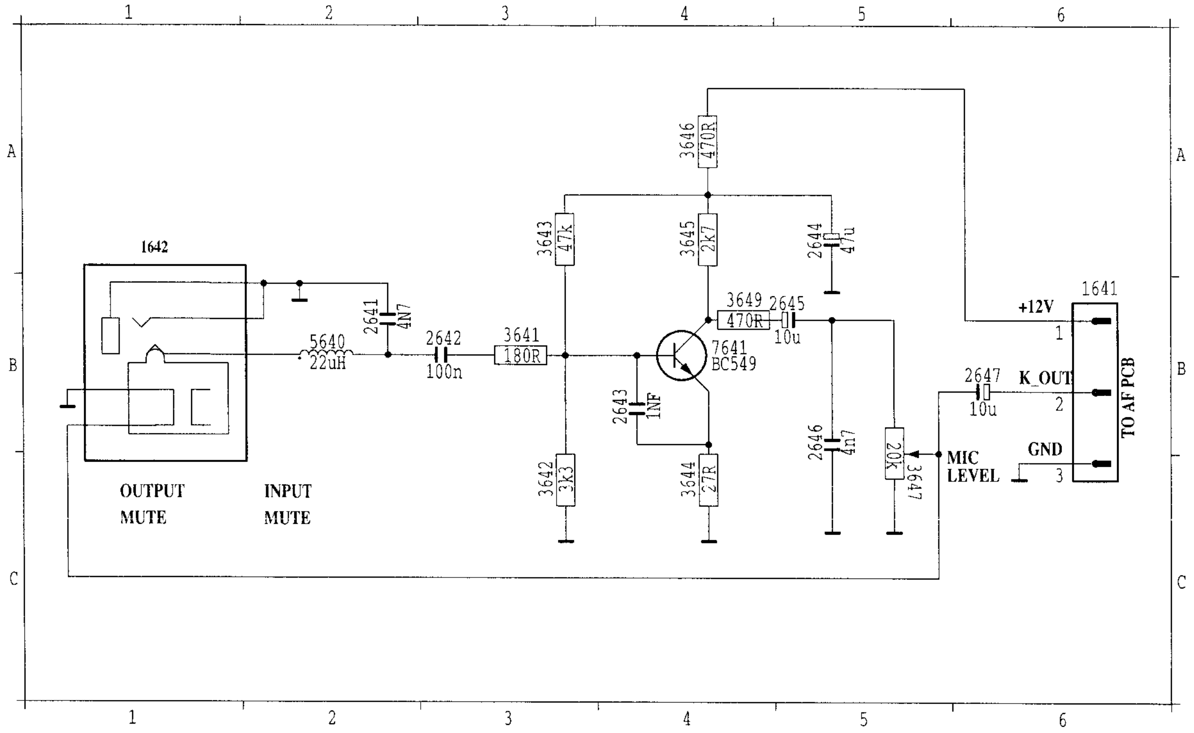
KARAOKE BOARD

TABLE OF CONTENTS

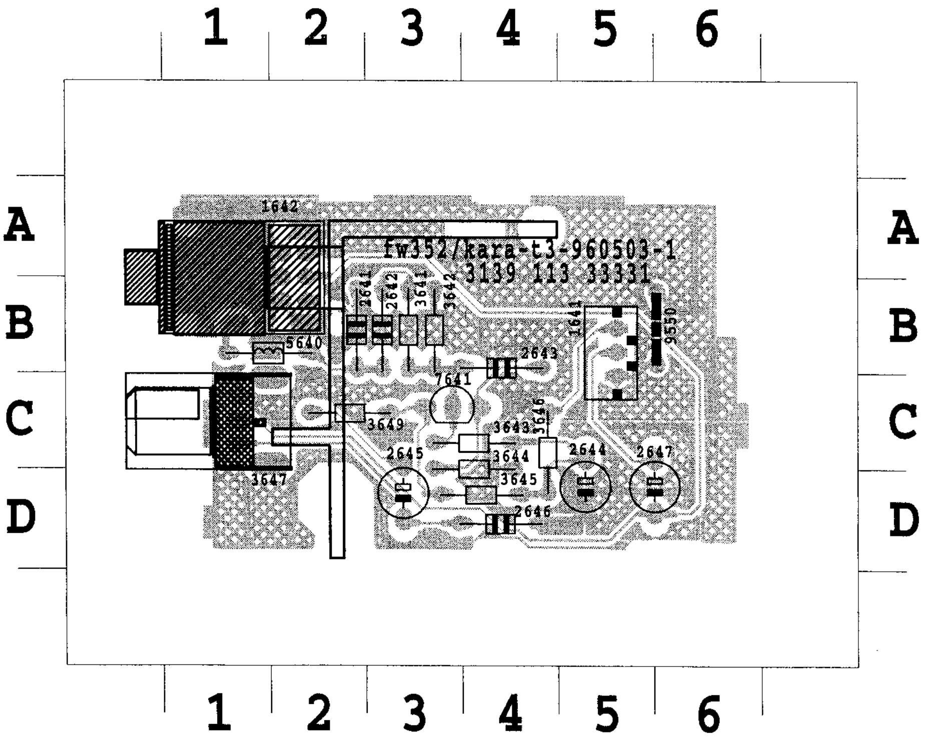
Component Layout .... 8 - 2
Circuit Diagram .... 8 - 2
Partlist .... 8 - 3

KARAOKE CIRCUIT & LAYOUT

1641 B 6	2642 B 3	2645 B 5	3641 B 3	3644 C 4	3647 C 5	7641 B 4
1642 A 1	2643 B 4	2646 B 5	3642 C 3	3645 A 4	3649 B 4	
2641 B 2	2644 A 5	2647 B 6	3643 A 3	3646 A 4	5640 B 2	

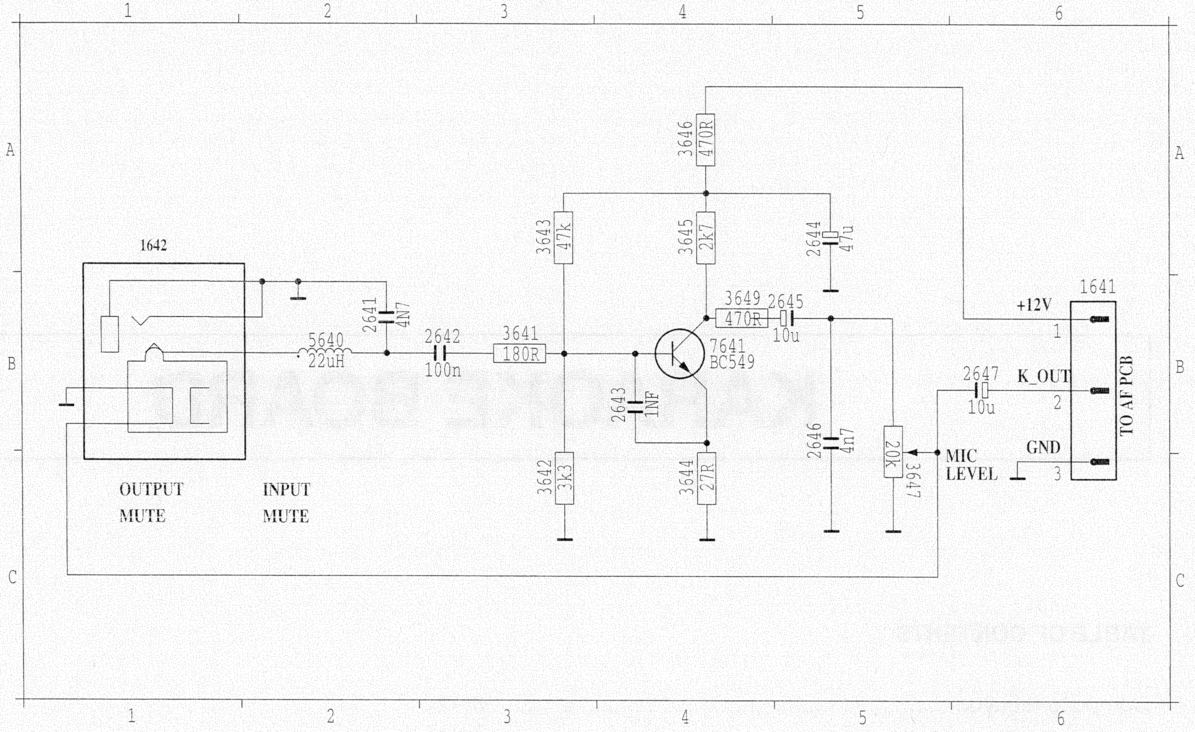

1
2
3
4
5
6
A
B
C
1642
OUTPUT MUTE
INPUT MUTE
5640 22uH
2641 4N7
2642 100n
3641 180R
3642 3k3
3643 47k
2643 1NF
7641 BC549
3644 27R
3645 2k7
3646 470R
2644 47u
3649 470R
2645 10u
2646 4n7
3647 20K
MIC LEVEL
2647 10u
+12V
K_OUT
GND
1641
TO AF PCB
1
2
3

1641 B 5	2643 B 4	2647 D 6	3644 D 4	3649 C 2
1642 B 1	2644 D 5	3641 B 3	3645 D 4	5640 B 1
2641 B 2	2645 D 3	3642 B 3	3646 C 4	7641 C 3
2642 B 3	2646 D 4	3643 C 4	3647 C 1	9550 B 6

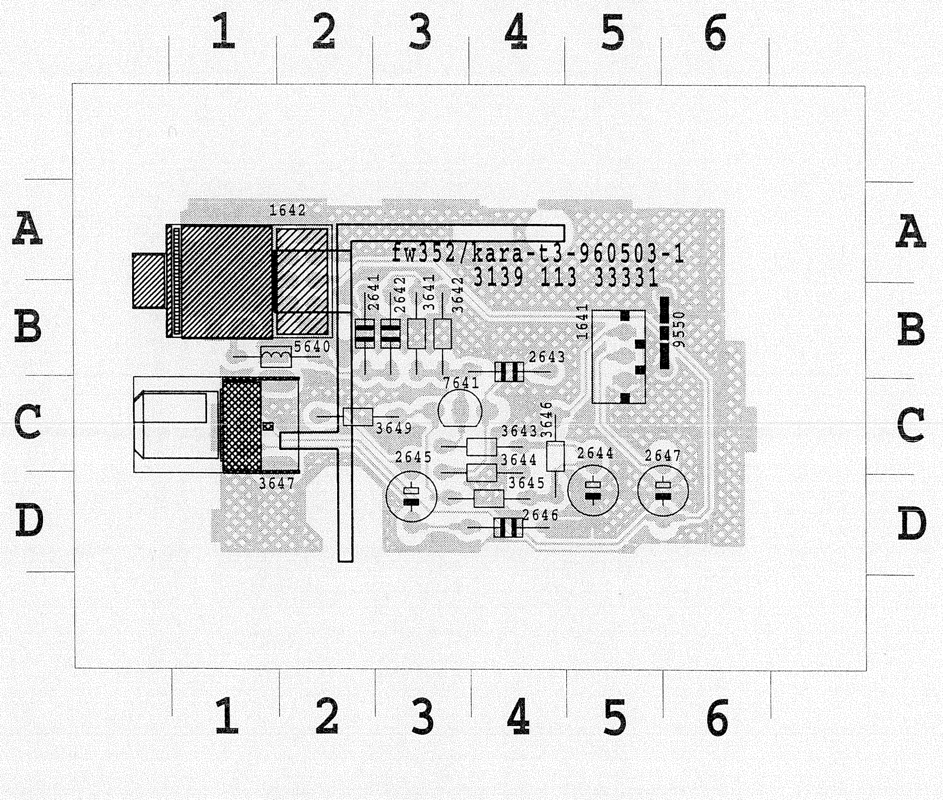

1
2
3
4
5
6
A
B
C
D
fw352/kara-t3-960503-1
3139 113 33331
1642
5640
2641
2642
3641
3642
2643
7641
3649
3647
2645
3643
3646
3644
3645
2646
2644
2647
1641
9550

KARAOKE CIRCUIT & LAYOUT

1641 B 6	2642 B 3	2645 B 5	3641 B 3	3644 C 4	3647 C 5	7641 B 4
1642 A 1	2643 B 4	2646 B 5	3642 C 3	3645 A 4	3649 B 4	
2641 B 2	2644 A 5	2647 B 6	3643 A 3	3646 A 4	5640 B 2	


1
2
3
4
5
6
A
B
C
1642
OUTPUT
MUTE
INPUT
MUTE
5640
22uH
2641
4N7
2642
100n
3641
180R
3643
47k
3642
3k3
2643
1NF
7641
BC549
3646
470R
3645
2k7
3644
27R
3649
470R
2645
10u
2644
47u
2646
4n7
20k
3647
MIC
LEVEL
2647
10u
+12V
K_OUT
GND
1641
1
2
3
TO AF PCB

1641 B 5	2643 B 4	2647 D 6	3644 D 4	3649 C 2
1642 B 1	2644 D 5	3641 B 3	3645 D 4	5640 B 1
2641 B 2	2645 D 3	3642 B 3	3646 C 4	7641 C 3
2642 B 3	2646 D 4	3643 C 4	3647 C 1	9550 B 6


1
2
3
4
5
6
A
B
C
D
1642
fw352/kara-t3-960503-1
3139 113 33331
2641
2642
3641
3642
1641
9550
5640
2643
7641
3649
3643
3646
2645
3644
2644
2647
3645
3647
2646

KARAOKE BOARD PARTSLIST

MISCELLANEOUS

2	4822 402 10222	Bracket
1642	4822 267 40898	Connector

CAPACITORS

2641	4822 126 11714	4.7nF 20% 50V
2642	4822 126 12882	100nF+80-20% 50V
2643	4822 122 33197	1nF 10% 50V
2644	4822 124 41751	47µF 20% 50V
2645	4822 124 41579	10µF 20% 50V
2646	4822 126 11714	4.7nF20%”
2647	4822 124 41579	10µF 20% 50V

RESISTORS

3641	4822 116 52213	180Ω 5% 0.5W
3642	4822 116 52269	3k3 5% 0.5W
3643	4822 116 52284	47k 5% 0.5W
3644	4822 116 52188	27Ω 5% 0.5W
3645	4822 116 52263	2k7 5% 0.5W
3646	4822 116 52224	470Ω 5% 0.5W
3647	4822 101 21204	20k Variable Resistor
3648	4822 116 52175	100Ω 5% 0.5W
3649	4822 116 52224	470Ω 5% 0.5W

TRANSISTOR

7641	4822 130 44246	BC549C

COIL

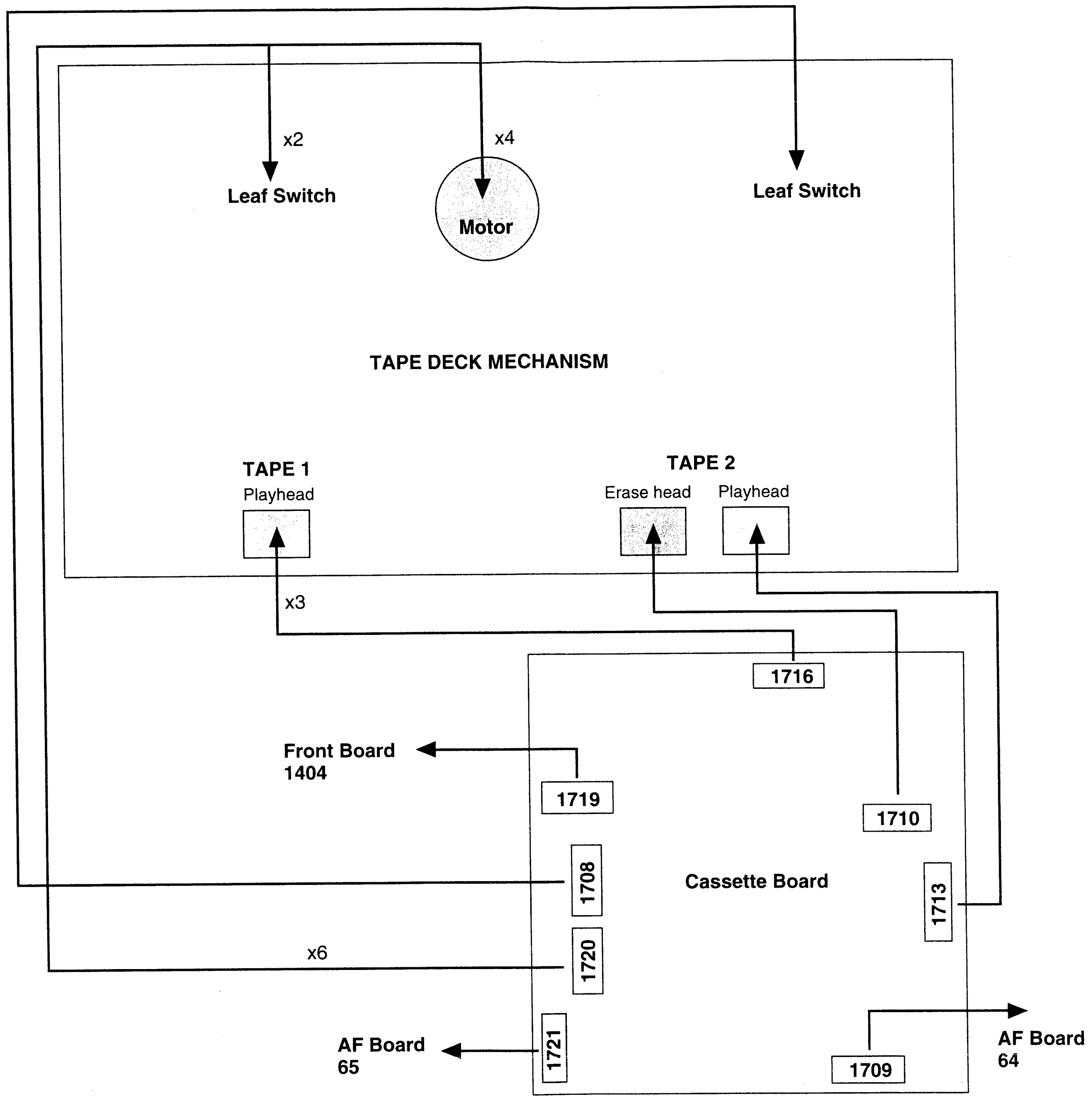
5640	4822 157 52983	Coil 22utt 10%

CASSETTE BOARD

TABLE OF CONTENTS

Wiring Diagram 9-1
Cassette adjustment table 9-1
Circuit Diagram 9-2
Layout Diagram 9-3
Partslist 9-4

TAPE DECK WIRING DIAGRAM



x2
x4
Leaf Switch
Motor
Leaf Switch
TAPE DECK MECHANISM
TAPE 1
Playhead
TAPE 2
Erase head
Playhead
x3
1716
Front Board
1404
1719
1710
1708
Cassette Board
1713
x6
1720
AF Board
65
1721
1709
AF Board
64

TAPE MECHANISM ADJUSTMENT

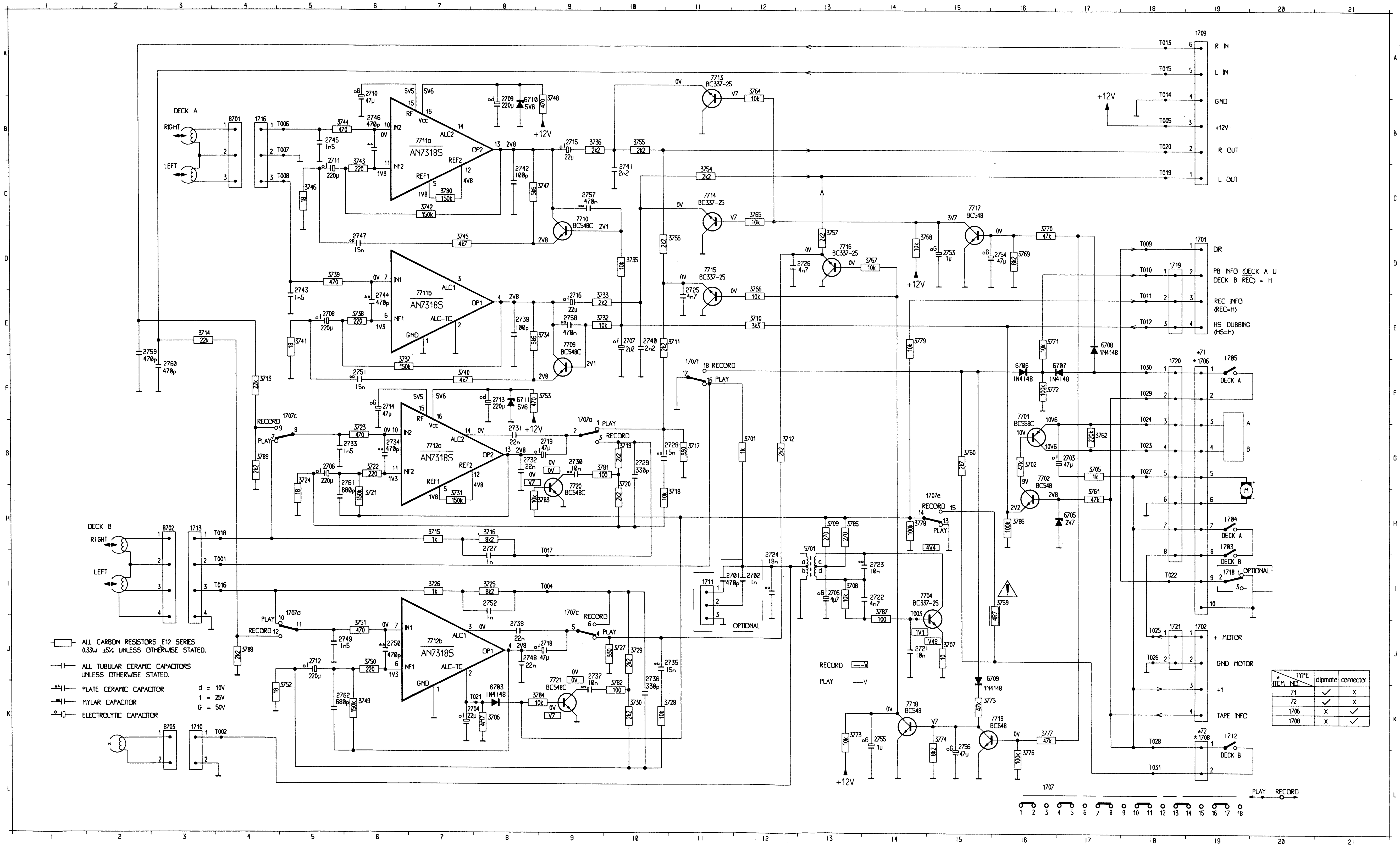
ADJUSTMENT	CASSETTE	DECK1	DECK2	MEASURE ON	READ ON	ADJUST WITH	ADJUST TO
Azimuth	10kHz SBC 420*	PLAY	-	T019/ T020	mV-meter	Left hand screw of Play or R/P head	Maximum L=R
		-	PLAY				
Motor speed	3150Hz SBC420*	PLAY	-	T019/ T020	Wow and Flutter meter	Preset in motor	**a
		-	PLAY				

* SBC 420 : 4822 397 30071

**a : The maximum permissible speed deviation is 2%.
More over, the Wow & Flutter value can be read.
This value should not exceed 0.4%.

CASSETTE BOARD

1701	D19
1702	J19
1703	H19
1704	H19
1705	F19
1706	F19
1707a	G 9
1707c	F 5
1707c	I 9
1707d	I 5
1707e	H15
1707f	F11
1708	K19
1709	A19
1710	K 3
1711	I11
1712	K19
1713	H 3
1716	B 4
1718	I19
1719	D18
1720	F18
1721	J18
2701	I12
2702	I12
2703	G17
2704	K 8
2705	I13
2706	G 5
2707	E10
2708	E 5
2709	B 8
2710	A 6
2711	C 5
2712	J 5
2713	F 8
2714	F 6
2715	B 9
2716	E 9
2718	J 9
2719	G 9
2721	J14
2722	I14
2723	I14
2724	I12
2725	E11
2726	D13
2727	H 8
2728	G11
2729	G10
2730	G 9
2731	G 8
2732	G 8
2733	G 6
2734	G 6
2735	J11
2736	J10
2737	J 9
2738	J 8
2739	E 8
2740	E10
2741	C10
2742	C 8
2743	E 5
2744	E 6
2745	B 5
2746	B 6
2747	D 6
2748	J 8
2749	J 6
2750	J 6
2751	F 6
2752	I 8
2753	D15
2754	D16
2755	K14
2756	L15
2757	C 9
2758	E 9
2759	E 3
2760	F 3
2761	G 6
2762	K 5
3701	G12
3702	G16
3705	G17
3706	K 8
3707	J15
3708	I13
3709	H13
3710	E12
3711	E11
3712	G12
3713	F 4
3714	E 3
3715	H 7
3716	H 8
3717	G11
3718	H11
3719	G10
3720	G10
3721	H 6
3722	G 6
3723	G 6
3724	G 5
3725	I 8
3726	I 7
3727	J10
3728	K11
3729	J10
3730	K10
3731	H 7
3732	E10
3733	E10
3734	E 9
3735	D10
3736	B 9
3737	F 6
3738	E 6
3739	D 5
3740	F 7
3741	E 5
3742	C 7
3743	C 6
3744	B 6
3745	D 7
3746	C 5
3747	C 9
3748	B 9
3749	K 6
3750	J 6
3751	J 6
3752	K 5
3753	F 9
3754	C11
3755	B10
3756	D11
3757	D13
3759	I15
3760	I15
3761	G16
3762	G17
3764	A12
3765	C12
3766	D12
3767	D14
3768	D15
3769	D16
3770	D16
3771	E16
3772	F16
3773	K13
3774	K15
3775	K15
3776	L16
3777	K16
3778	H14
3779	E14
3780	C 7
3781	G10
3782	K10
3783	H 9
3784	K 9
3785	H13
3786	H16
3787	I14
3788	J 4
3789	G 4
5701	H13
6703	K 8
6705	H16
6706	F16
6707	F17
6708	E17
6709	J15
6710	B 8
6711	F 8
7701	F16
7702	G16
7704	I14
7709	E 9
7710	C 9
7711a	B 7
7711b	E 7
7712a	G 7
7712b	J 7
7713	A11
7714	C11
7715	D11
7716	D13
7717	C15
7718	K14
7719	K15
7720	H 9
7721	J 9
8701	B 4
8702	H 3
8703	K 3
T001	I 3
T002	K 3
T003	I14
T004	I 9
T005	B18
T006	B 4
T007	B 4
T008	C 4
T009	D18
T010	D18
T011	E18
T012	E18
T013	A18
T014	A18
T015	A18
T016	I 3
T017	I 9
T018	H 3
T019	C18
T020	B18
T021	K 7
T022	I18
T023	G18
T024	F18
T025	J18
T026	J18
T027	G18
T028	K18
T029	F18
T030	F18
T031	L18


DECK A
RIGHT
LEFT
DECK B
RIGHT
LEFT
8701
1716
8702
1713
8703
1710
AN7318S
7711a
7711b
7712a
7712b
1709
R IN
L IN
GND
+12V
R OUT
L OUT
1701
DIR
PB INFO (DECK A U DECK B REC) = H
REC INFO (REC=H)
HS DUBBING (HS=H)
1719
1720
1706
1705
DECK A
1704
DECK A
1703
DECK B
1718
OPTIONAL
1721
1702
+ MOTOR
GND MOTOR
+1
TAPE INFO
1708
1712
DECK B
1711
OPTIONAL
RECORD
PLAY
1707
PLAY
RECORD
+12V

ALL CARBON RESISTORS E12 SERIES 0.33W ±5% UNLESS OTHERWISE STATED.

ALL TUBULAR CERAMIC CAPACITORS UNLESS OTHERWISE STATED.

PLATE CERAMIC CAPACITOR

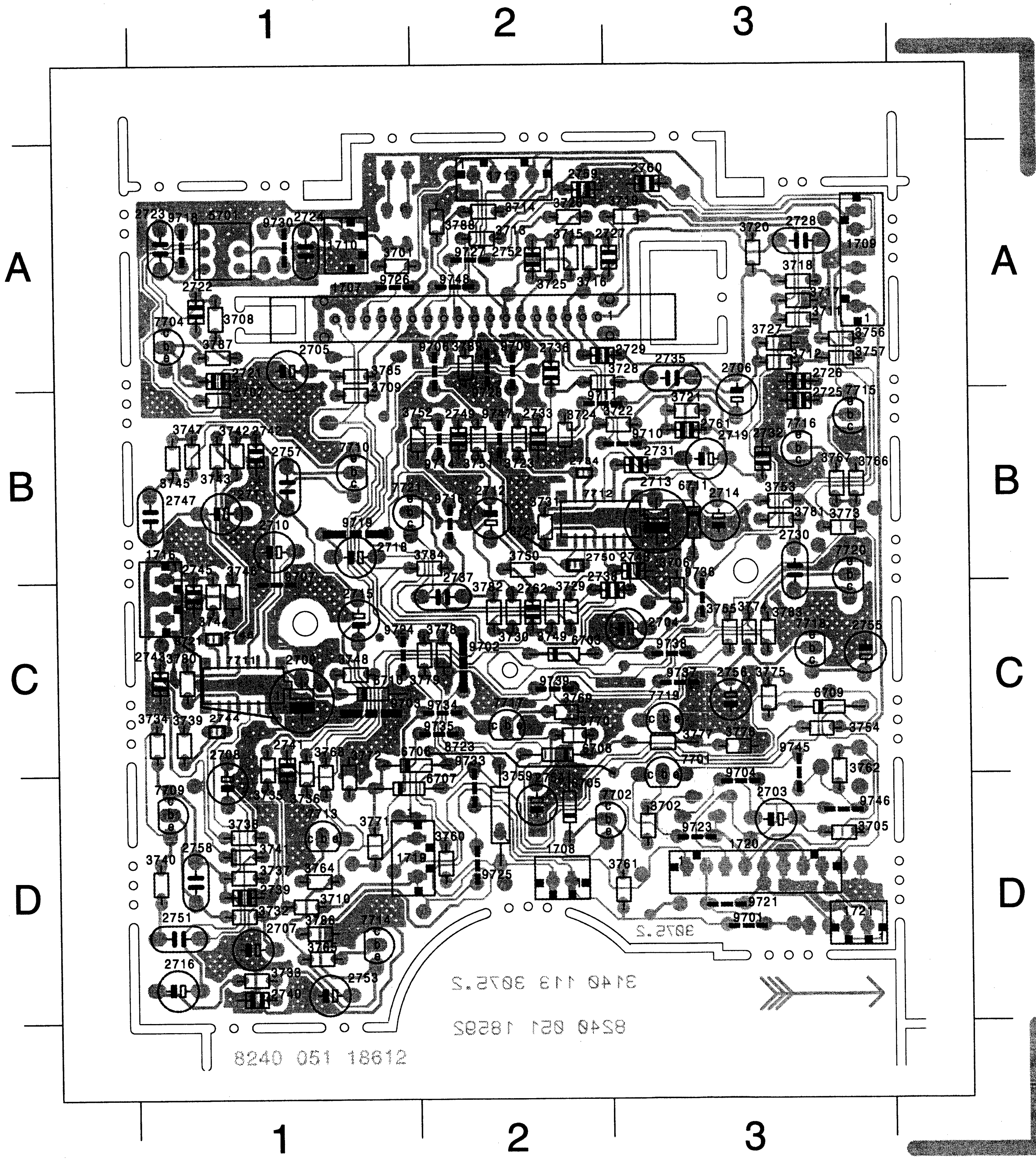
MYLAR CAPACITOR

ELECTROLYTIC CAPACITOR

d = 10V
f = 25V
G = 50V

* ITEM NO. / TYPE	dipmate	connector
71	✓	X
72	✓	X
1706	X	✓
1708	X	✓

CASSETTE LAYOUT-Component side view



1707	A	2
1708	D	2
1709	A	3
1710	A	1
1713	A	2
1716	C	1
1719	D	1
1720	D	3
1721	D	3
2703	D	3
2704	C	3
2705	A	1
2706	B	3
2707	D	1
2708	D	1
2709	C	1
2710	B	1
2711	B	1
2712	B	2
2713	B	3
2714	B	3
2715	C	1
2716	D	1
2718	B	1
2719	B	3
2721	A	1
2722	A	1
2723	A	1
2724	A	1
2725	B	3
2726	A	3
2727	A	3
2728	A	3
2729	A	2
2730	B	3
2731	B	3
2732	B	3
2733	B	2
2734	B	2
2735	A	3
2736	A	2
2737	C	2
2738	C	3
2739	D	1
2740	D	1
2741	C	1
2742	B	1
2743	C	1
2744	C	1
2745	C	1
2746	C	1
2747	B	1
2748	B	3
2749	B	2
2750	B	2
2751	D	1
2752	A	2
2753	D	1
2754	D	2
2755	C	3
2756	C	3
2757	B	1
2758	D	1
2759	A	2
2760	A	3
2761	B	3
2762	C	2
3701	A	1
3702	D	3
3705	D	3
3706	C	3
3707	B	1
3708	A	1
3709	B	1
3710	D	1
3711	A	3
3712	A	3
3713	A	2
3714	A	2
3715	A	2
3716	A	2
3717	A	3
3718	A	3
3719	A	3
3720	A	3
3721	B	3
3722	B	3
3723	B	2
3724	B	2
3725	A	2
3726	A	2
3727	A	3
3728	A	2
3729	C	2
3730	C	2
3731	B	2
3732	D	1
3733	D	1
3734	C	1
3735	C	1
3736	C	1
3737	D	1
3738	D	1
3739	C	1
3740	D	1
3741	D	1
3742	B	1
3743	B	1
3744	C	1
3745	B	1
3746	C	1
3747	B	1
3748	C	1
3749	C	2
3750	B	2
3751	B	2
3752	B	2
3753	B	3
3754	C	3
3755	C	3
3756	A	3
3757	A	3
3759	D	2
3760	D	2
3761	D	3
3762	C	3
3764	D	1
3765	D	1
3766	B	3
3767	B	3
3768	D	1
3769	C	2
3770	C	2
3771	D	1
3772	D	1
3773	B	3
3774	C	3
3775	C	3
3776	C	3
3777	C	3
3778	C	2
3779	C	2
3780	C	1
3781	B	3
3782	C	2
3783	C	3
3784	B	2
3785	A	1
3786	D	1
3787	A	1
3788	A	2
3789	A	2
5701	A	1
6703	C	2
6705	D	2
6706	C	1
6707	D	1
6708	C	2
6709	C	3
6710	C	1
6711	B	3
7701	D	3
7702	D	2
7704	A	1
7709	D	1
7710	B	1
7711	C	1
7712	B	2
7713	D	1
7714	D	1
7715	B	3
7716	B	3
7717	C	2
7718	C	3
7719	C	3
7720	B	3
7721	B	1
9701	D	3
9702	C	2
9703	C	1
9704	D	3
9706	A	2
9707	C	1
9709	A	2
9710	B	3
9711	B	2
9714	B	2
9716	B	2
9718	A	1
9719	B	1
9721	D	3
9723	D	3
9724	C	1
9725	D	2
9726	A	1
9727	A	2
9728	A	2
9730	A	1
9733	D	2
9734	C	2
9735	C	2
9736	C	3
9737	C	3
9738	C	3
9739	C	2
9745	D	3
9746	D	3
9747	B	2
9748	A	2
8720	B	2
8721	C	1
8723	C	2

CAPACITORS

2703	4822 124 41397	47µF 20% 25V
2704	4822 124 41596	22µF 20% 50V
2705	4822 124 40246	4.7µF 20% 63V
2706	4822 124 40181	22µF 20% 10V
2707	4822 124 41576	2.2µF 20% 50V
2708	4822 124 40181	220µF 20% 10V
2709	4822 124 80144	220µF 20% 25V
2710	4822 124 41397	47µF 20% 25V
2711	4822 124 40181	220µF 20% 10V
2712	4822 124 40181	220µF 20% 10V
2713	4822 124 80144	220µF 20% 25V
2714	4822 124 41397	47µF 20% 25V
2715	4822 124 41596	22µF 20% 50V
2716	4822 124 41596	22µF 20% 50V
2718	4822 124 41397	47µF 20% 25V
2719	4822 124 41397	47µF 20% 25V
2721	4822 121 51387	10nF 20% 16V
2722	4822 126 11714	4.7nF 20% 50V
2723	4822 121 51304	10nF 10% 50V
2724	4822 121 51306	18nF 10% 50V
2725	4822 126 11714	4.7nF 20%
2726	4822 126 11714	4.7nF 20%
2727	4822 122 33197	1nF 10% 50V
2728	4822 121 51305	15nF 10% 50V
2729	4822 126 12787	330pF 10% 50V
2730	4822 121 51304	10nF 10% 50V
2731	4822 126 11585	22nF +80-20% 25V
2732	4822 126 11585	22nF +80-20% 25V
2733	4822 126 12878	1.5nF 10% 16V
2734	5322 122 32311	470pF 10% 100V
2735	4822 121 51305	15nF 10% 50V
2736	4822 126 12787	330pF 10% 50V
2737	4822 121 51304	10nF 10% 50V
2738	4822 126 11585	22nF +80-20% 25V
2739	4822 122 33195	100pF 10% 50V
2740	4822 126 12339	2.2nF 20%
2741	4822 126 12339	2.2nF 20%
2742	4822 122 33195	100pF 10% 50V
2743	4822 126 12878	1.5nF 10% 16V
2744	5322 122 32311	470pF 10% 100V
2745	4822 126 12878	1.5nF 10% 16V
2746	5322 122 32311	470pF 10% 100V
2747	4822 121 51305	15nF 10% 50V
2748	4822 126 11585	22nF +80-20% 25V
2749	4822 126 12878	1.5nF 10% 16V

CAPACITORS

2750	5322 122 32311	470pF 10% 100V
2751	4822 121 51305	15nF 10% 50V
2752	4822 122 33197	1nF 10% 50V
2753	4822 124 40242	1µF 20% 63V
2754	4822 124 41397	47µF 20% 25V
2756	4822 124 41397	47µF 20% 25V
2755	4822 124 40242	1µF 20% 63V
2757	4822 121 51252	470nF 5% 63V
2758	4822 121 51252	470nF 5% 63V
2759	4822 122 33519	470pF 10% 50V
2760	4822 122 33519	470pF 10% 50V
2761	4822 122 33169	680pF 10% 50V
2762	4822 122 33169	680pF 10% 50V

RESISTORS

3701	4822 116 83863	1k 5% 0.5W
3702	4822 116 52284	47k 5% 0.5W
3705	4822 116 83863	1k 5% 0.5W
3706	4822 111 30893	4M7 5% 0.2W
3707	4822 116 52176	10Ω 5% 0.5W
3708	4822 116 83864	10k 5% 0.5W
3709	4822 116 52217	270Ω 5% 0.5W
3710	4822 116 52269	3k3 5% 0.5W
3711	4822 116 52256	2k2 5% 0.5W
3712	4822 116 52256	2k2 5% 0.5W
3713	4822 116 52257	22k 5% 0.5W
3714	4822 116 52257	22k 5% 0.5W
3715	4822 116 83863	1k 5% 0.5W
3716	4822 116 52303	8k2 5% 0.5W
3713	4822 116 52257	22k 5% 0.5W
3714	4822 116 52257	22k 5% 0.5W
3717	4822 116 52219	330Ω 5% 0.5W
3718	4822 116 83864	10k 5% 0.5W
3719	4822 116 52256	2k2 5% 0.5W
3720	4822 116 52256	2k2 5% 0.5W
3721	4822 116 52245	150k 5% 0.5W
3722	4822 116 52215	220Ω 5% 0.5W
3723	4822 116 52224	470Ω 5% 0.5W
3724	4822 116 52184	18Ω 5% 0.5W
3725	4822 116 52303	8k2 5% 0.5W
3726	4822 116 83863	1k 5% 0.5W
3727	4822 116 52219	330Ω 5% 0.5W
3728	4822 116 83864	10k 5% 0.5W
3729	4822 116 52256	2k2 5% 0.5W
3730	4822 116 52256	2k2 5% 0.5W
3731	4822 116 52245	150k 5% 0.5W

RESISTORS

3732	4822 116 83864	10k 5% 0.5W
3733	4822 116 52256	2k2 5% 0.5W
3734	4822 116 52289	5k6 5% 0.5W
3735	4822 116 83864	10k 5% 0.5W
3736	4822 116 52256	2k2 5% 0.5W
3737	4822 116 52245	150k 5% 0.5W
3738	4822 116 52215	220Ω 5% 0.5W
3739	4822 116 52224	470Ω 5% 0.5W
3740	4822 116 52283	4k7 5% 0.5W
3741	4822 116 52184	18Ω 5% 0.5W
3742	4822 116 52245	150k 5% 0.5W
3743	4822 116 52215	220Ω 5% 0.5W
3744	4822 116 52224	470Ω 5% 0.5W
3745	4822 116 52283	4k7 5% 0.5W
3746	4822 116 52184	18Ω 5% 0.5W
3747	4822 116 52289	5k6 5% 0.5W
3748	4822 116 52224	470Ω 5% 0.5W
3749	4822 116 52245	150k 5% 0.5W
3750	4822 116 52215	220Ω 5% 0.5W
3751	4822 116 52224	470Ω 5% 0.5W
3752	4822 116 52184	18Ω 5% 0.5W
3753	4822 116 52224	470Ω 5% 0.5W
3754	4822 116 52256	2k2 5% 0.5W
3755	4822 116 52256	2k2 5% 0.5W
3756	4822 116 52256	2k2 5% 0.5W
3757	4822 116 52256	2k2 5% 0.5W
3759	4822 052 10478	4Ω7 5% 0.33W
3760	4822 116 52263	2k7 5% 0.5W
3761	4822 116 52284	47k 5% 0.5W
3764	4822 116 83864	10k 5% 0.5W
3762	4822 116 83874	220k 5% 0.5W
3765	4822 116 83864	10k 5% 0.5W
3766	4822 116 83864	10k 5% 0.5W
3767	4822 116 83864	10k 5% 0.5W
3768	4822 116 83864	10k 5% 0.5W
3769	4822 116 52303	8k2 5% 0.5W
3770	4822 116 52284	47k 5% 0.5W
3771	4822 116 83864	10k 5% 0.5W
3772	4822 116 52234	100k 5% 0.5W
3773	4822 116 83864	10k 5% 0.5W
3774	4822 116 52303	8k2 5% 0.5W
3775	4822 116 52284	47k 5% 0.5W
3776	4822 116 52234	100k 5% 0.5W
3777	4822 116 52284	47k 5% 0.5W
3778	4822 116 52234	100k 5% 0.5W

RESISTORS

3779	4822 116 83864	10k 5% 0.5W
3780	4822 116 52245	150k 5% 0.5W
3781	4822 116 52175	100Ω 5% 0.5W
3782	4822 116 52175	100Ω 5% 0.5W
3783	4822 116 83864	10k 5% 0.5W
3784	4822 116 83864	10k 5% 0.5W
3785	4822 116 52217	270Ω 5% 0.5W
3786	4822 116 52234	100k 5% 0.5W
3787	4822 116 52175	100Ω 5% 0.5W
3788	4822 116 52256	2k2 5% 0.5W
3789	4822 116 52256	2k2 5% 0.5W

COIL

5701	4822 157 10371	100KHZ OSC COIL

DIODES

6703	4822 130 30621	1N4148
6705	5322 130 34563	BZX79-C2V7
6706	4822 130 30621	1N4148
6707	4822 130 30621	1N4148
6708	4822 130 30621	1N4148
6709	4822 130 30621	1N4148
6710	4822 130 34173	BZX79-C5V6
6711	4822 130 34173	BZX79-C5V6

TRANSISTORS

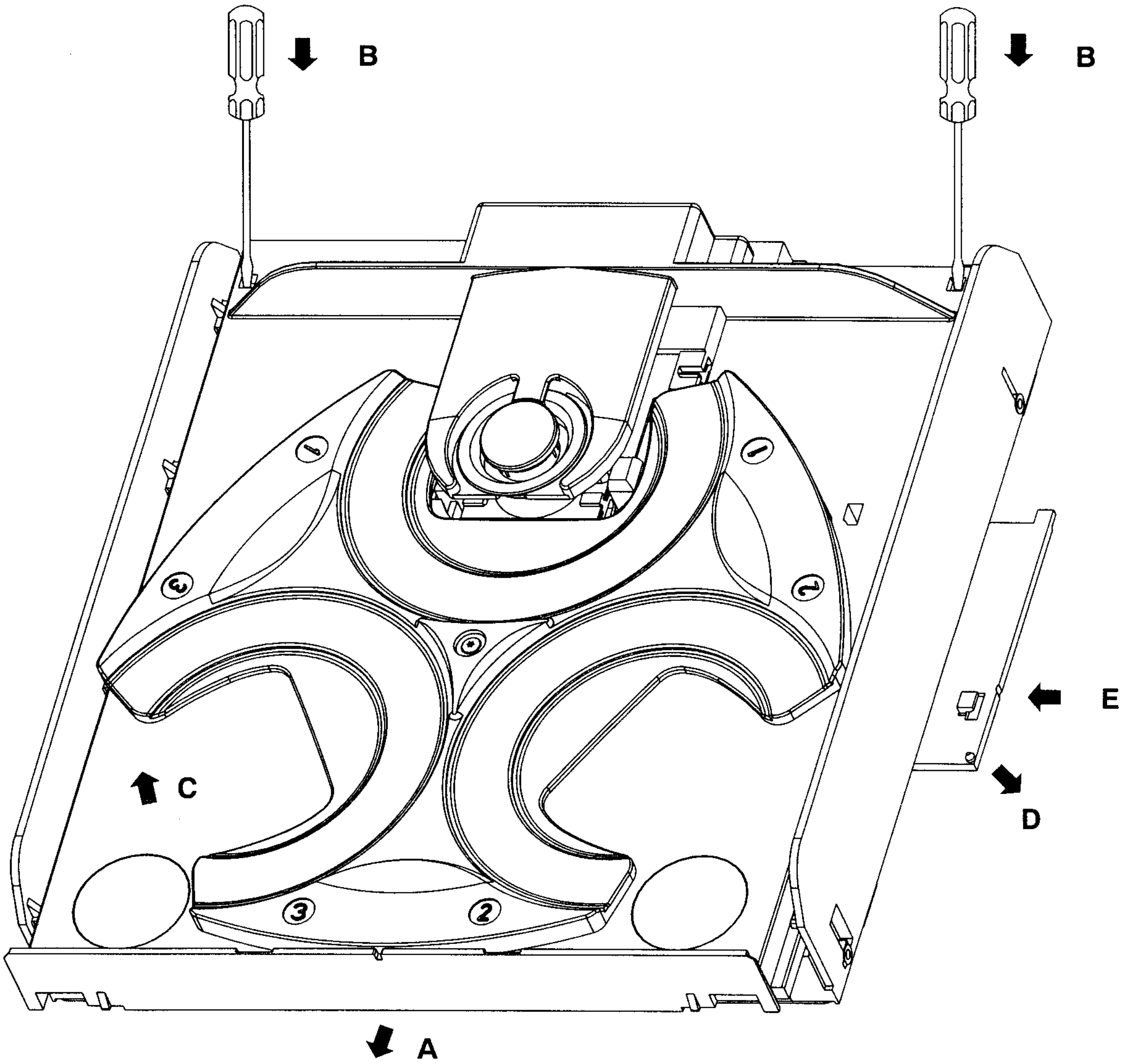
7701	5322 130 60068	BC558C
7702	4822 130 40938	BC548
7704	4822 130 40981	BC337-25
7709	4822 130 44196	BC548C
7710	4822 130 44196	BC548C
7711	4822 209 32918	AN7318S
7712	4822 209 32918	AN7318S
7713	4822 130 40981	BC337-25
7714	4822 130 40981	BC337-25
7715	4822 130 40981	BC337-25
7716	4822 130 40981	BC337-25
7717	4822 130 40938	BC548
7718	4822 130 40938	BC548
7719	4822 130 40938	BC548
7720	4822 130 44196	BC548C
7721	4822 130 44196	BC548C

CDC3 MODULE BOARD

TABLE OF CONTENTS

Demounting Hints 10-2
Servicing Hints 10-3
CD servo servicing hints 10-4
Service position 10-5
Lubricating Instructions 10-6
Wiring Diagram 10-8
Block Diagram 10-9
Circuit Diagram 10-10
Component Layout 10-11
Exploded View 10-12
Partslist 10-14

DEMOUNTING HINTS



DEMOUNTING OF DRAWER

⇒ **A** Pull drawer outwards
⇒ **B** Unlock drawer with srcrewdriver
⇒ **C** Lift drawer to demount from chassis

DEMOUNTING OF FLEX PLATE

⇒ **D** Lift plate to unlock pin from bottom plate
⇒ **E** Move plate inwards to demount from bottom plate

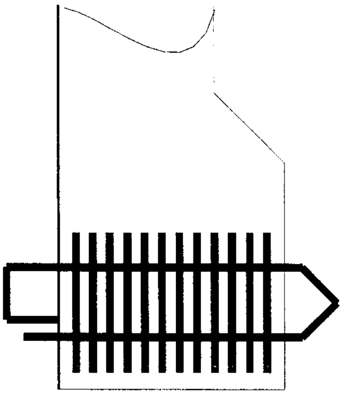
SERVICING HINTS

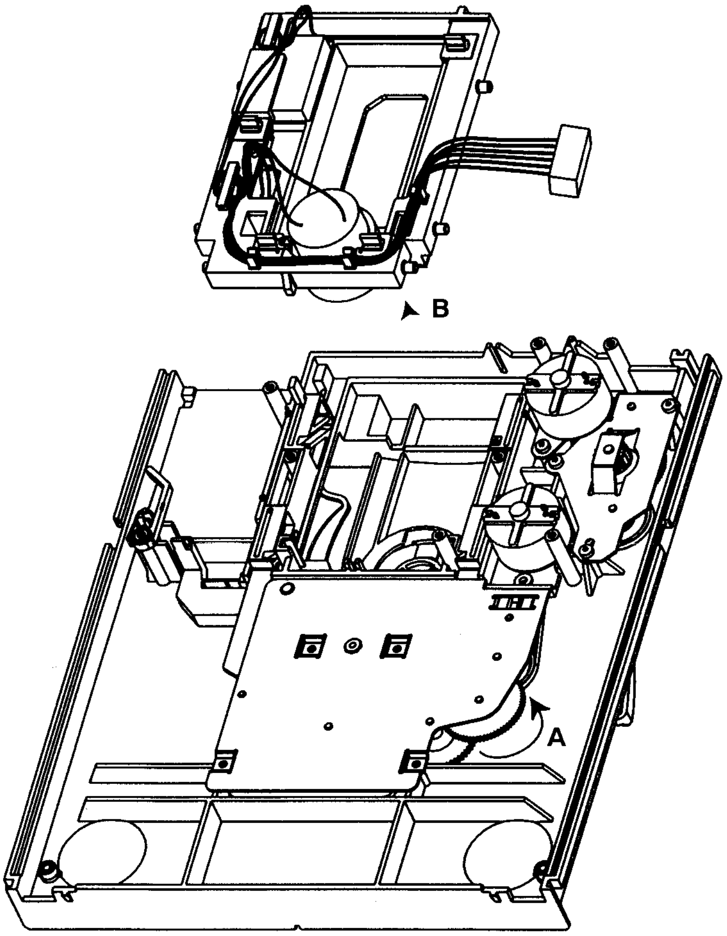
REPLACEMENT OF CDM-12.1

See also exploded view of changer mechanism.

1. Demount flex plate (140).
2. Demount printboard: remove 6 screws and desolder lips of tray motor and carrousel motor.
3. Disconnect flexfoil and JST connector of CDM from PCB. Put paperclip on flexfoil to protect CDM against laser damage.
4. Remove 2 screws 107 and 108 and demount CDM lockings 105 and 106.
5. Turn gearwheel 42 of disc-change-mechanism by finger to move CDM-support in upper position(position of carrousel between 2 discs during changing). **A**
6. Demount CDM-support 95. **B**
7. Replace CDM 100. The wire tree of JST connector has to be desoldered and resoldered on the new CDM.

CDM flex foil





MOUNTING OF CARROUSEL

1. Turn gearwheel 42 of disc change mechanism by finger until CDM is in play position.
2. Mount carrousel 115 so that disc is positioned right on the turntable. Carrousel positionnumber doesn't matter.

CD SERVO SERVICE HINTS

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CDM-ELECTRONICS WHEN CONNECTION A NEW CDM MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE
- SWITSH OFF POWER SUPPLY
- ESD PROTECTION
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the CDM mechanism:

1. Disconnect old CDM flexfoil from printed board
2. Connect paperclip to CDM flexfoil to short-circuit flexfoil (fig. 1)
3. Short-circuit printed board with **brass-sheet (4822 321 11197)** plugged into the flexfoil connector (fig. 2)
4. Remove old CDM mechanism
5. Position new CDM mechanism in its studs
6. Remove short-circuit from printed board connector
7. Remove short-circuit from flexfoil of new CDM
8. Connect new flexfoil to print connector (fig. 3)

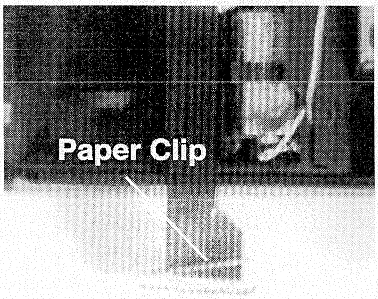


fig. 1

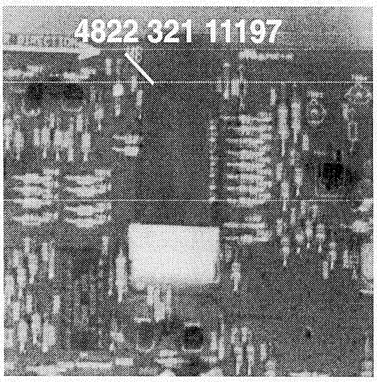


fig2

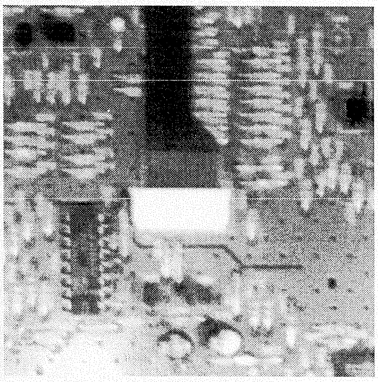
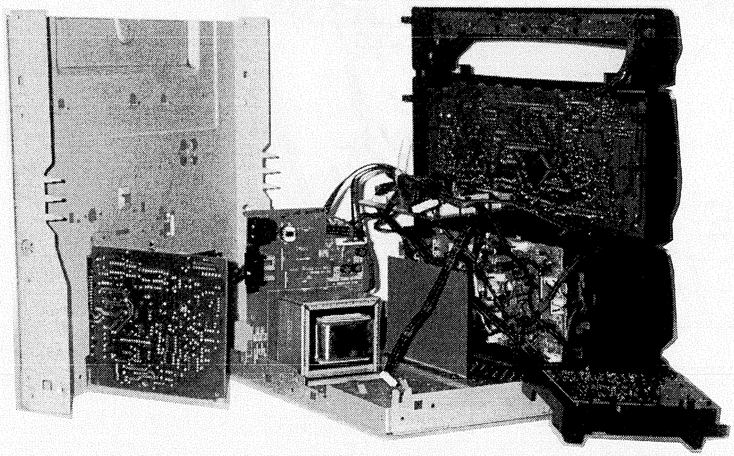
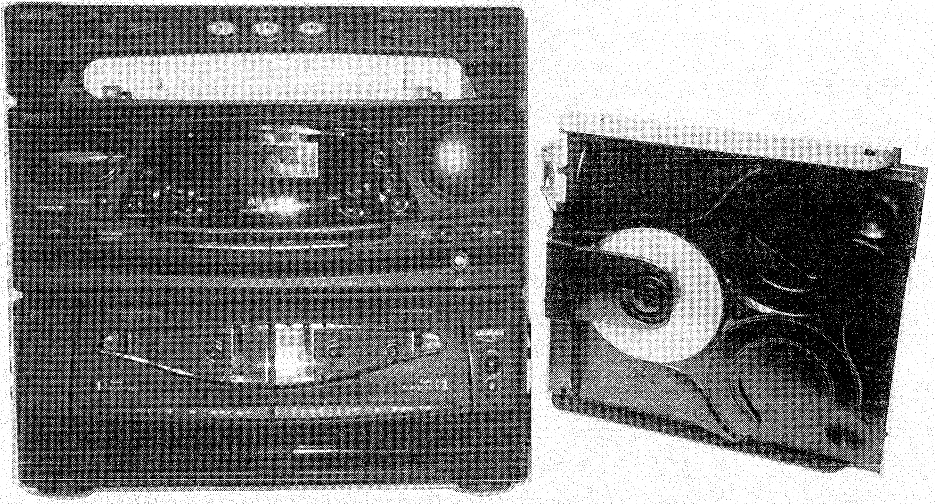


fig. 3

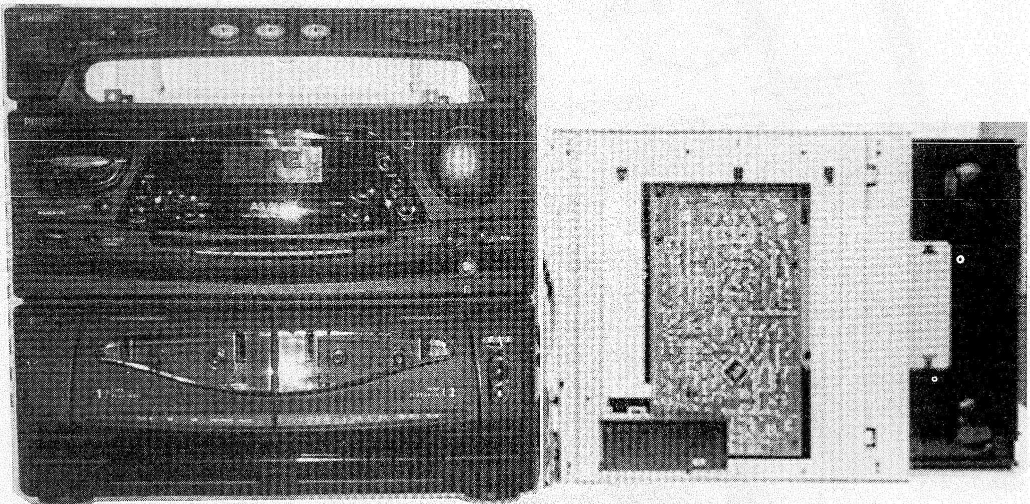
Service Position for CDC module



1) Follow the dismantling sequence shown in page 3-3 before coming to service position A.



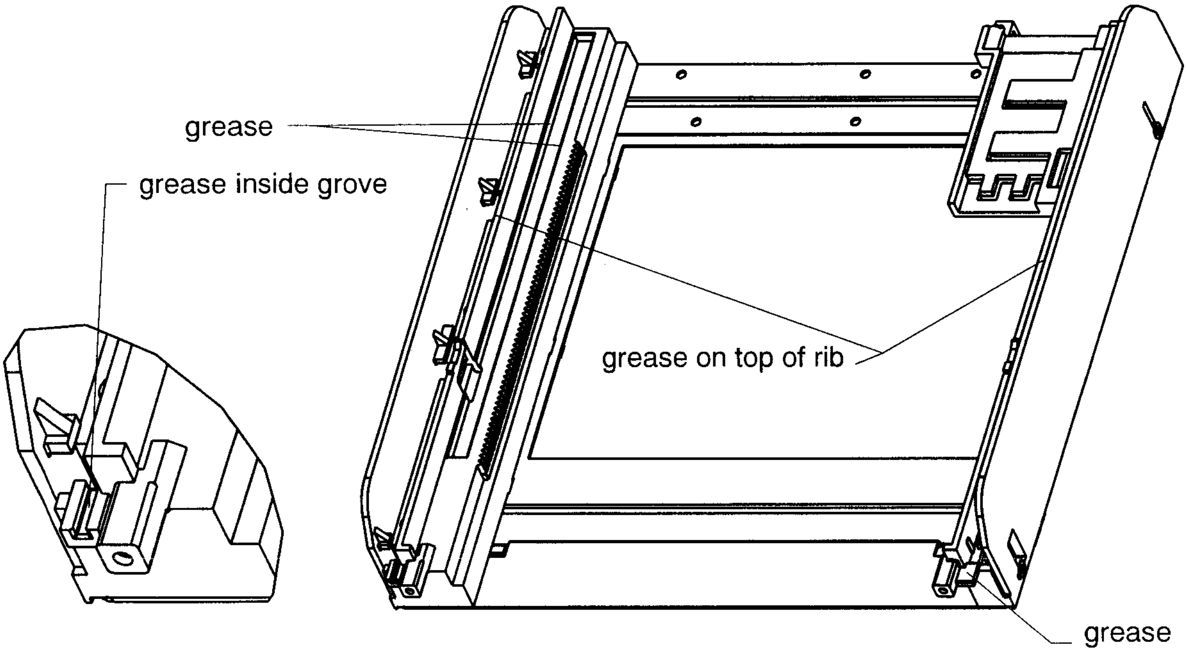
2) Service position B



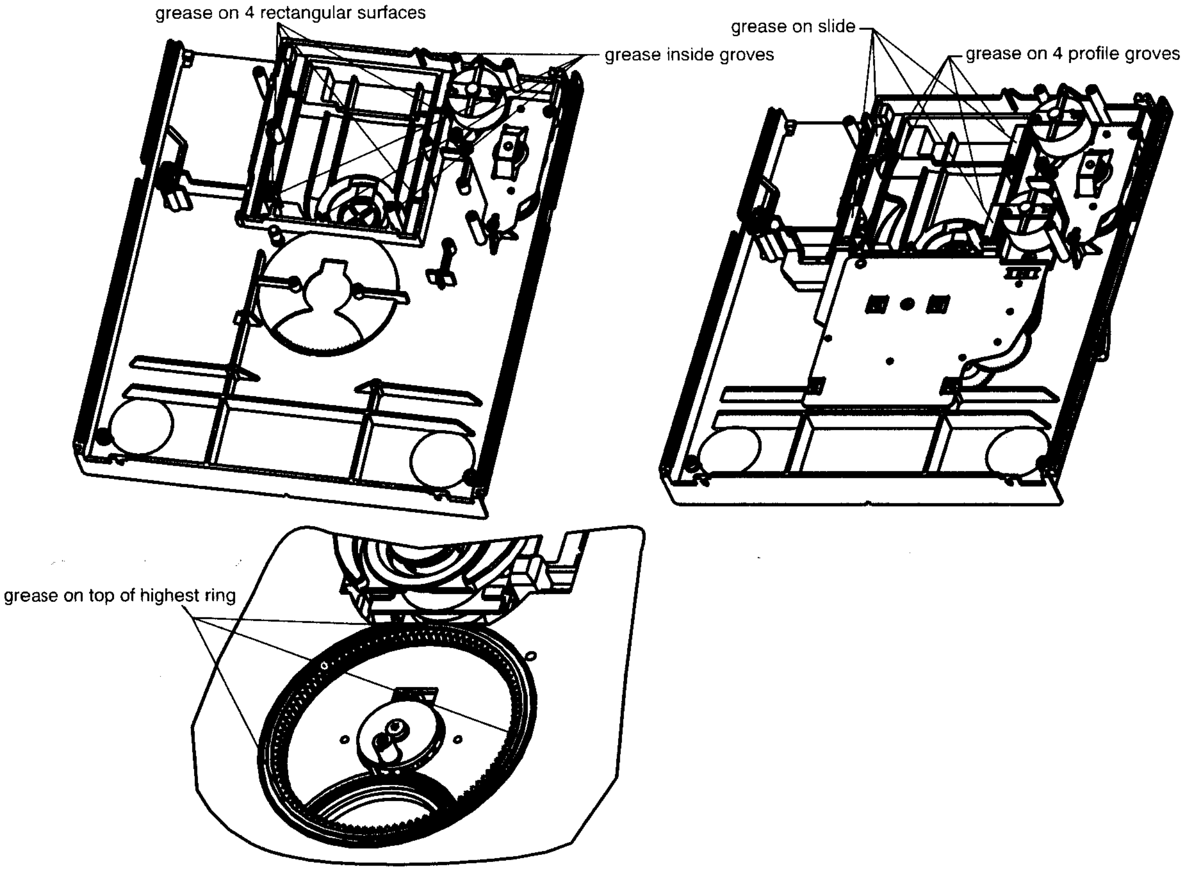
3) Service position C

LUBRICATING INSTRUCTIONS

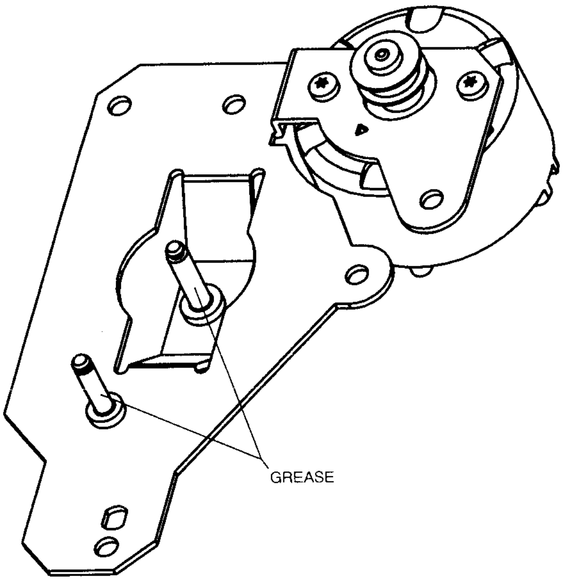
CHASSIS


grease
grease inside grove
grease on top of rib
grease

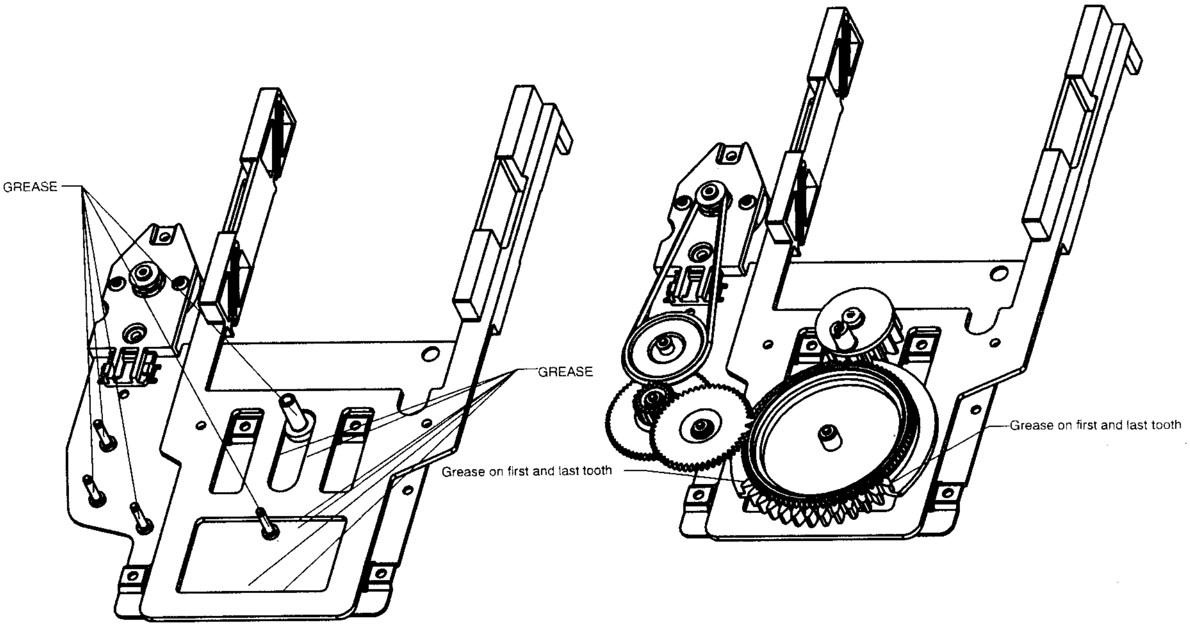
DRAWER


grease on 4 rectangular surfaces
grease inside groves
grease on slide
grease on 4 profile groves
grease on top of highest ring

DRAWER MECHANISM

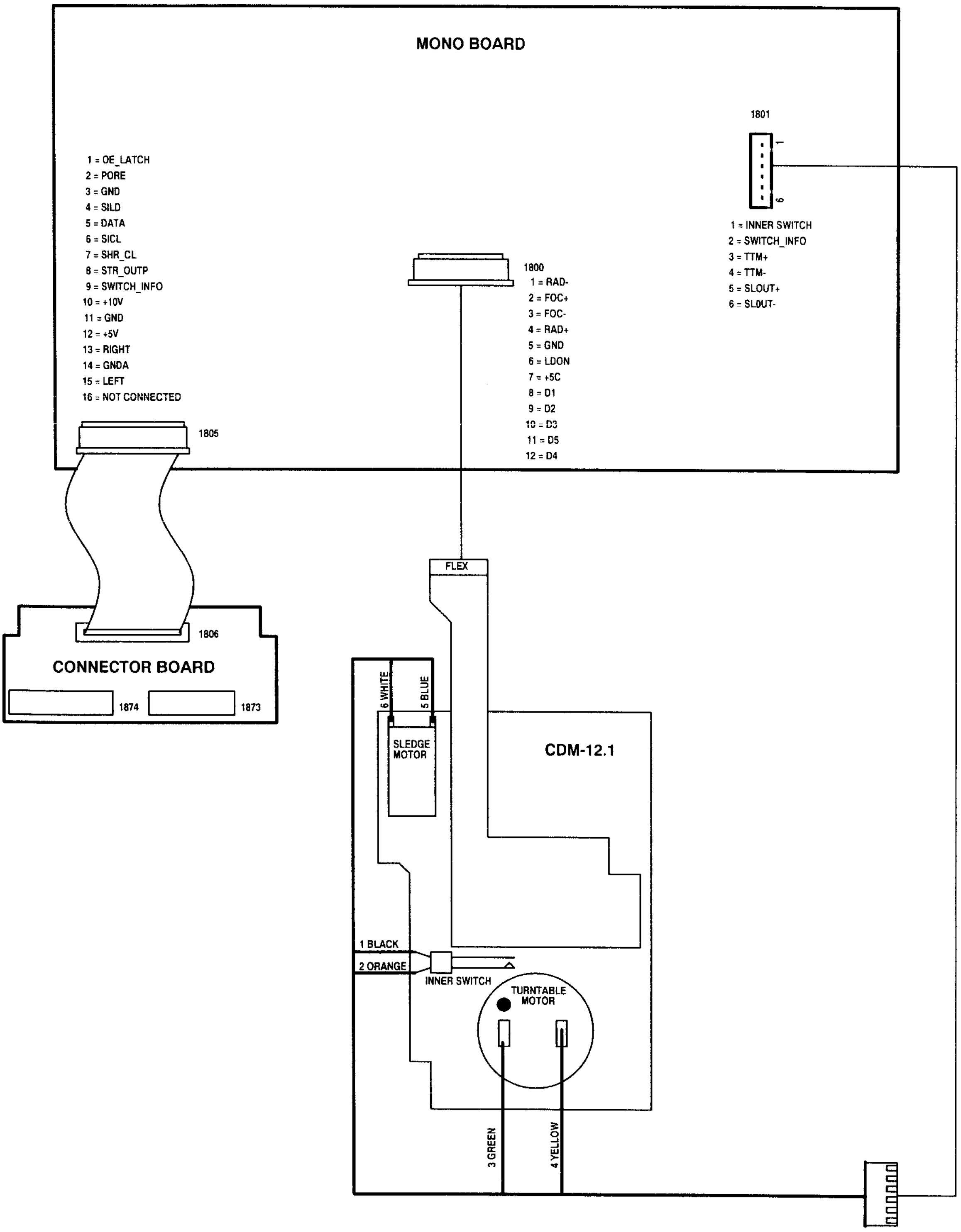


DISC-CHANGE MECHANISM

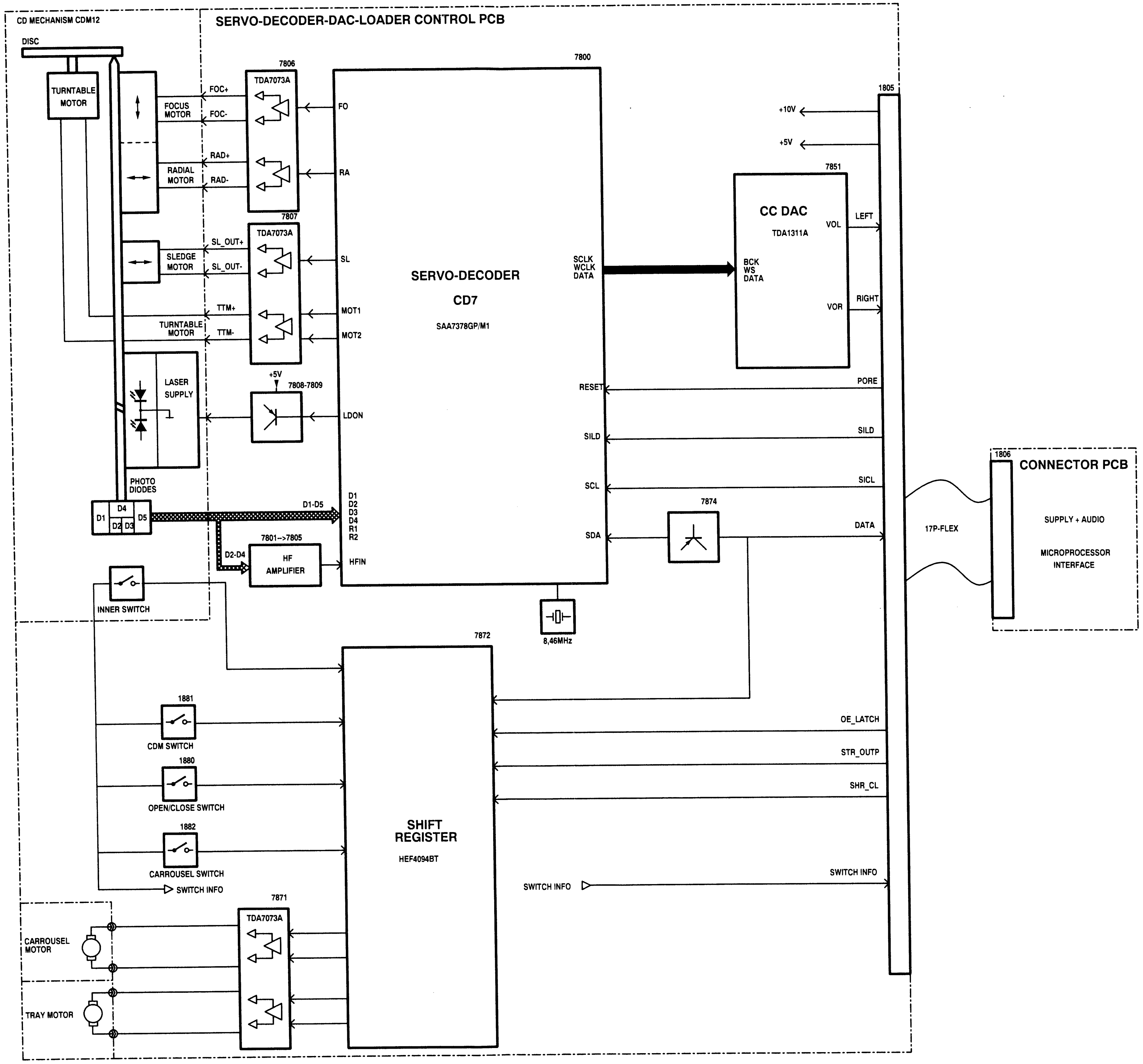

GREASE
GREASE
Grease on first and last tooth
Grease on first and last tooth

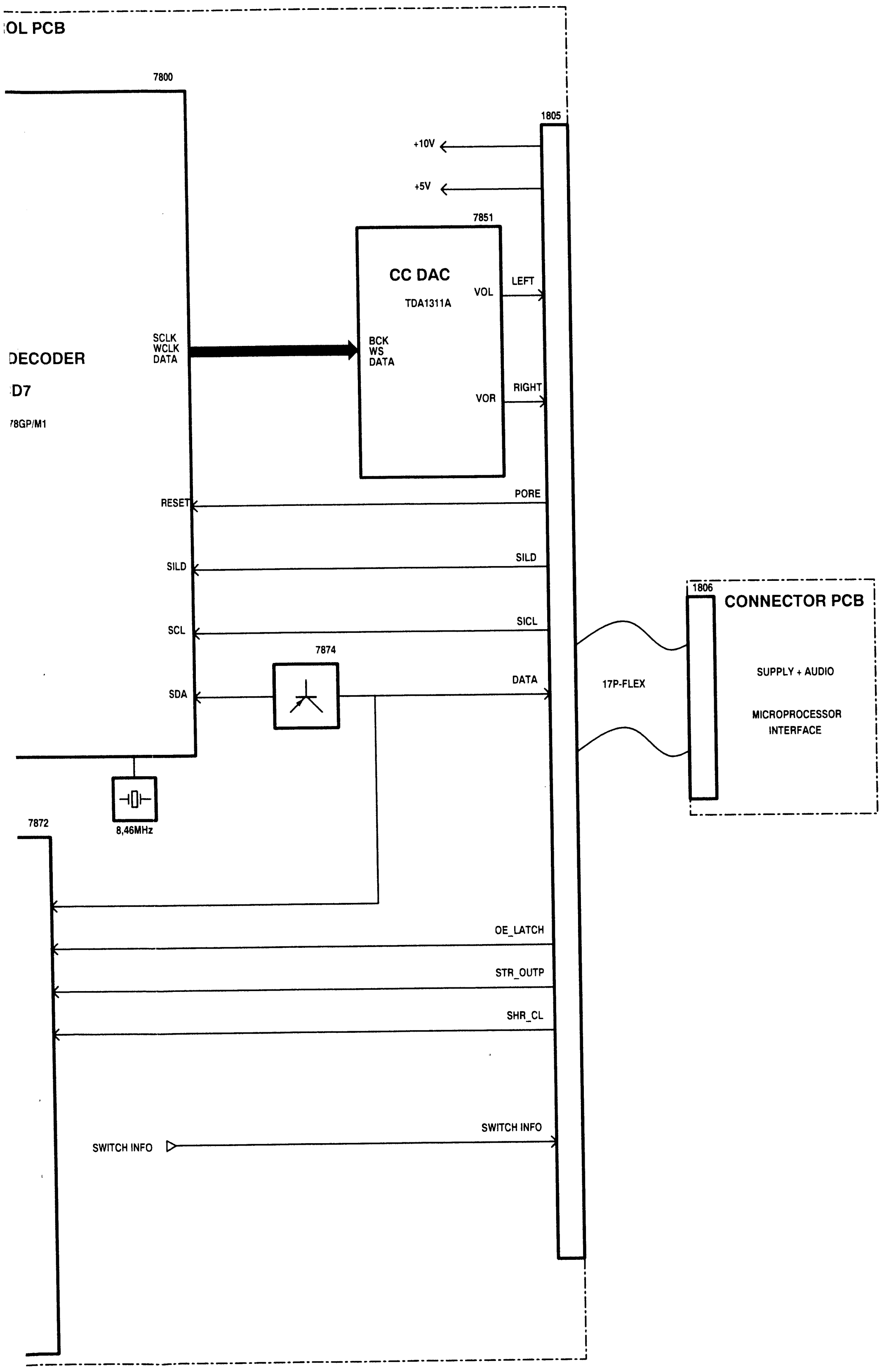
Use only grease **Polylub GLY 801** service codenumber 4822 390 10136

WIRING DIAGRAM

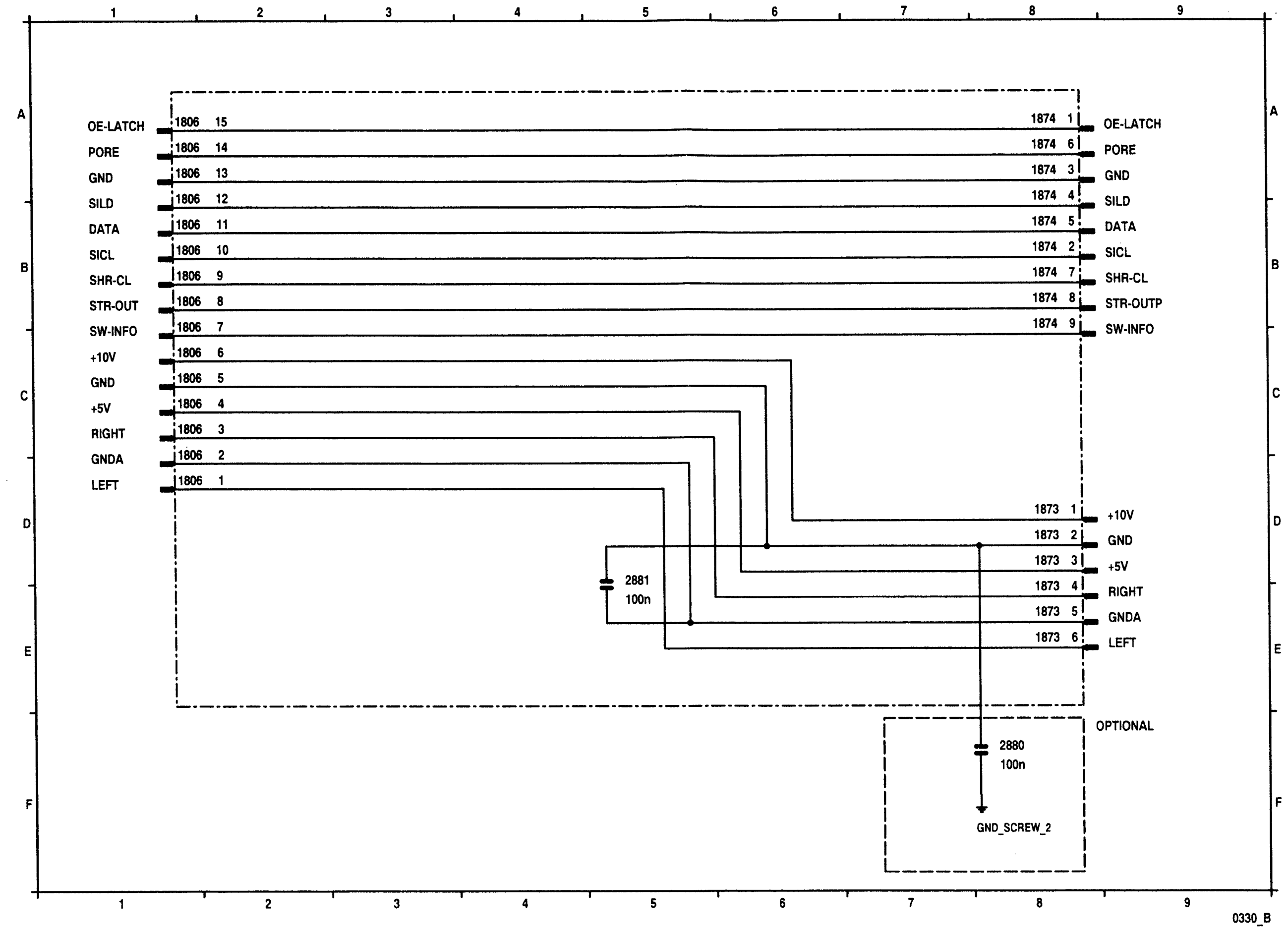

MONO BOARD
1801
1
6
1 = INNER SWITCH
2 = SWITCH_INFO
3 = TTM+
4 = TTM-
5 = SLOUT+
6 = SLOUT-
1 = OE_LATCH
2 = PORE
3 = GND
4 = SILD
5 = DATA
6 = SICL
7 = SHR_CL
8 = STR_OUTP
9 = SWITCH_INFO
10 = +10V
11 = GND
12 = +5V
13 = RIGHT
14 = GNDA
15 = LEFT
16 = NOT CONNECTED
1805
1800
1 = RAD-
2 = FOC+
3 = FOC-
4 = RAD+
5 = GND
6 = LDON
7 = +5C
8 = D1
9 = D2
10 = D3
11 = D5
12 = D4
FLEX
1806
CONNECTOR BOARD
1874
1873
6 WHITE
5 BLUE
SLEDGE MOTOR
CDM-12.1
1 BLACK
2 ORANGE
INNER SWITCH
TURNTABLE MOTOR
3 GREEN
4 YELLOW

BLOCK DIAGRAM

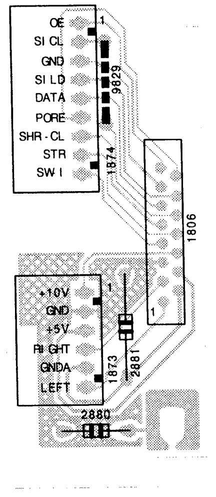

CD MECHANISM CDM12
SERVO-DECODER-DAC-LOADER CONTROL PCB
DISC
TURNTABLE MOTOR
FOCUS MOTOR
RADIAL MOTOR
SLEDGE MOTOR
TURNTABLE MOTOR
LASER SUPPLY
PHOTO DIODES
D1
D2
D3
D4
D5
INNER SWITCH
7806
TDA7073A
FOC+
FOC-
RAD+
RAD-
7807
TDA7073A
SL_OUT+
SL_OUT-
TTM+
TTM-
+5V
7808-7809
D1-D5
D2-D4
7801-->7805
HF AMPLIFIER
7800
FO
RA
SL
MOT1
MOT2
LDON
D1
D2
D3
D4
R1
R2
HFIN
SERVO-DECODER
CD7
SAA7378GP/M1
SCLK
WCLK
DATA
RESET
SILD
SCL
SDA
8,46MHz
7851
CC DAC
TDA1311A
BCK
WS
DATA
VOL
VOR
LEFT
RIGHT
+10V
+5V
1805
PORE
SILD
SICL
DATA
7874
17P-FLEX
1806
CONNECTOR PCB
SUPPLY + AUDIO
MICROPROCESSOR INTERFACE
7872
SHIFT REGISTER
HEF4094BT
OE_LATCH
STR_OUTP
SHR_CL
SWITCH INFO
SWITCH INFO
1881
CDM SWITCH
1880
OPEN/CLOSE SWITCH
1882
CARROUSEL SWITCH
SWITCH INFO
7871
TDA7073A
CARROUSEL MOTOR
TRAY MOTOR


OL PCB
7800
1805
+10V
+5V
7851
CC DAC
TDA1311A
VOL
LEFT
VOR
RIGHT
BCK
WS
DATA
SCLK
WCLK
DATA
DECODER
D7
78GP/M1
RESET
PORE
SILD
SILD
SCL
SICL
SDA
DATA
7874
8,46MHz
7872
OE_LATCH
STR_OUTP
SHR_CL
SWITCH INFO
SWITCH INFO
17P-FLEX
1806
CONNECTOR PCB
SUPPLY + AUDIO
MICROPROCESSOR
INTERFACE

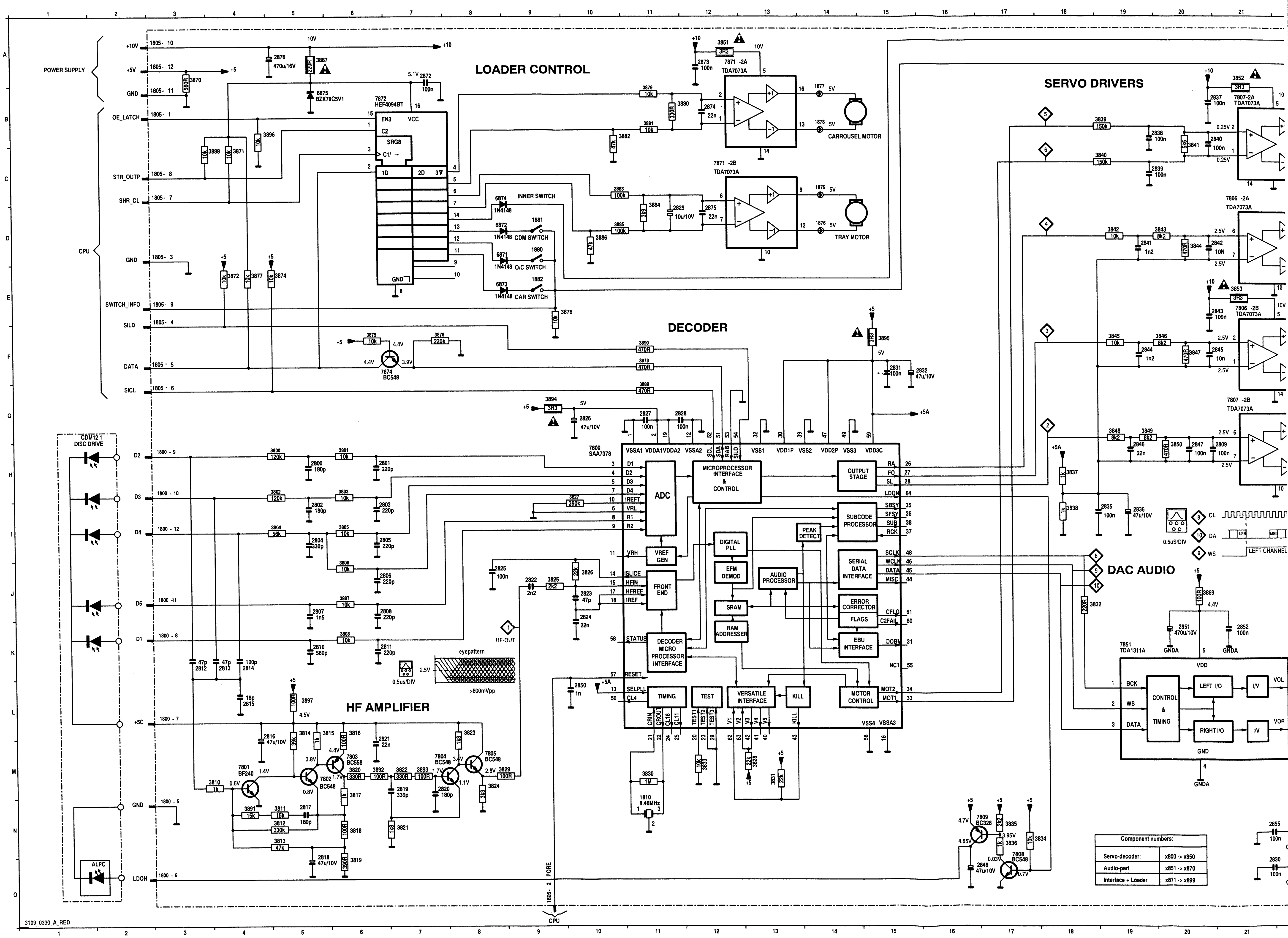
CONNECTOR WIRING AND LAYOUT


OE-LATCH
PORE
GND
SILD
DATA
SICL
SHR-CL
STR-OUT
SW-INFO
+10V
GND
+5V
RIGHT
GNDA
LEFT
1806 15
1806 14
1806 13
1806 12
1806 11
1806 10
1806 9
1806 8
1806 7
1806 6
1806 5
1806 4
1806 3
1806 2
1806 1
1874 1
1874 6
1874 3
1874 4
1874 5
1874 2
1874 7
1874 8
1874 9
OE-LATCH
PORE
GND
SILD
DATA
SICL
SHR-CL
STR-OUTP
SW-INFO
1873 1
1873 2
1873 3
1873 4
1873 5
1873 6
+10V
GND
+5V
RIGHT
GNDA
LEFT
2881
100n
2880
100n
OPTIONAL
GND_SCREW_2
0330_B

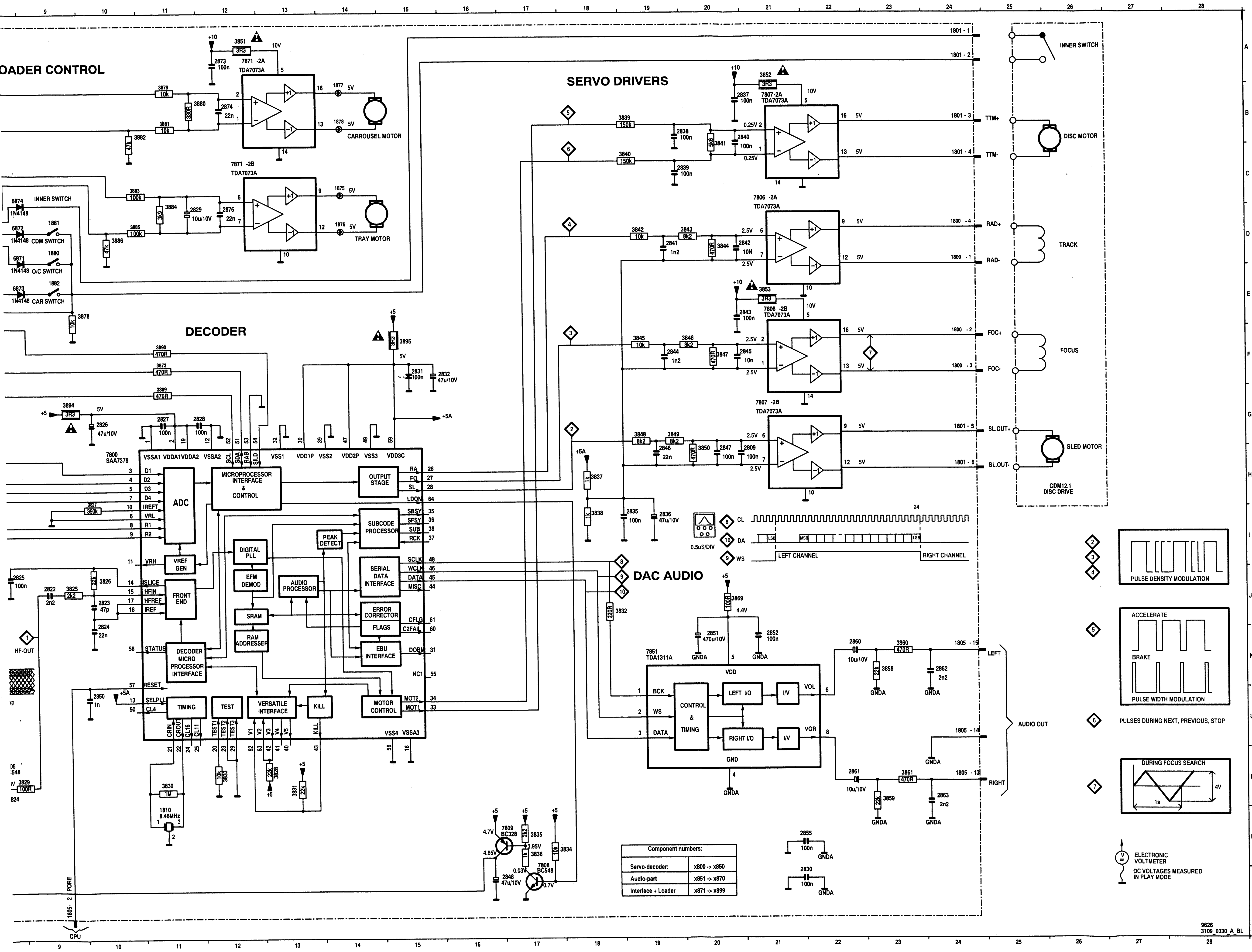
1806	D 1
1806	D 1
1806	C 1
1806	C 1
1806	C 1
1806	C 1
1806	C 1
1806	B 1
1806	B 1
1806	B 1
1806	B 1
1806	B 1
1806	A 1
1806	A 1
1806	A 1
1873	D 8
1873	D 8
1873	D 8
1873	E 8
1873	E 8
1873	E 8
1874	A 8
1874	B 8
1874	A 8
1874	B 8
1874	B 8
1874	A 8
1874	B 8
1874	B 8
1874	C 8
2880	F 8
2881	D 5


OE
SI CL
GND
SI LD
DATA
PORE
SHR - CL
STR
SW I
9829
1874
1806
+10V
GND
+5V
RIGHT
GNDA
LEFT
1873
2881
2880

CDC CIRCUIT


LOADER CONTROL
DECODER
SERVO DRIVERS
HF AMPLIFIER
DAC AUDIO
POWER SUPPLY
CPU
+10V
+5V
GND
OE_LATCH
STR_OUTP
SHR_CL
SWITCH_INFO
SILD
DATA
SICL
CDM12.1 DISC DRIVE
D2
D3
D4
D5
D1
+5C
LDON
ALPC
7872 HEF4094BT
EN3
C2
SRG8
VCC
GND
7871 -2A TDA7073A
7871 -2B TDA7073A
CARROUSEL MOTOR
TRAY MOTOR
INNER SWITCH
CDM SWITCH
O/C SWITCH
CAR SWITCH
6875 BZX79C5V1
7874 BC548
7800 SAA7378
ADC
MICROPROCESSOR INTERFACE & CONTROL
OUTPUT STAGE
SUBCODE PROCESSOR
DIGITAL PLL
EFM DEMOD
PEAK DETECT
VREF GEN
FRONT END
AUDIO PROCESSOR
SERIAL DATA INTERFACE
SRAM
RAM ADDRESSER
ERROR CORRECTOR
FLAGS
EBU INTERFACE
DECODER MICRO PROCESSOR INTERFACE
TIMING
TEST
VERSATILE INTERFACE
KILL
MOTOR CONTROL
1810 8.46MHz
HF-OUT
eyepattern
0,5us/DIV
>800mVpp
7801 BF240
7802 BC548
7803 BC558
7804 BC548
7805 BC548
7806 -2A TDA7073A
7806 -2B TDA7073A
7807-2A TDA7073A
7807 -2B TDA7073A
7809 BC328
7808 BC548
7851 TDA1311A
BCK
WS
DATA
CONTROL & TIMING
LEFT I/O
RIGHT I/O
I/V
VDD
GND
GNDA
VOL
VOR
CL
DA
WS
LSB
MSB
LEFT CHANNEL
0.5uS/DIV
1805 - 2 PORE
CPU
3109_0330_A_RED

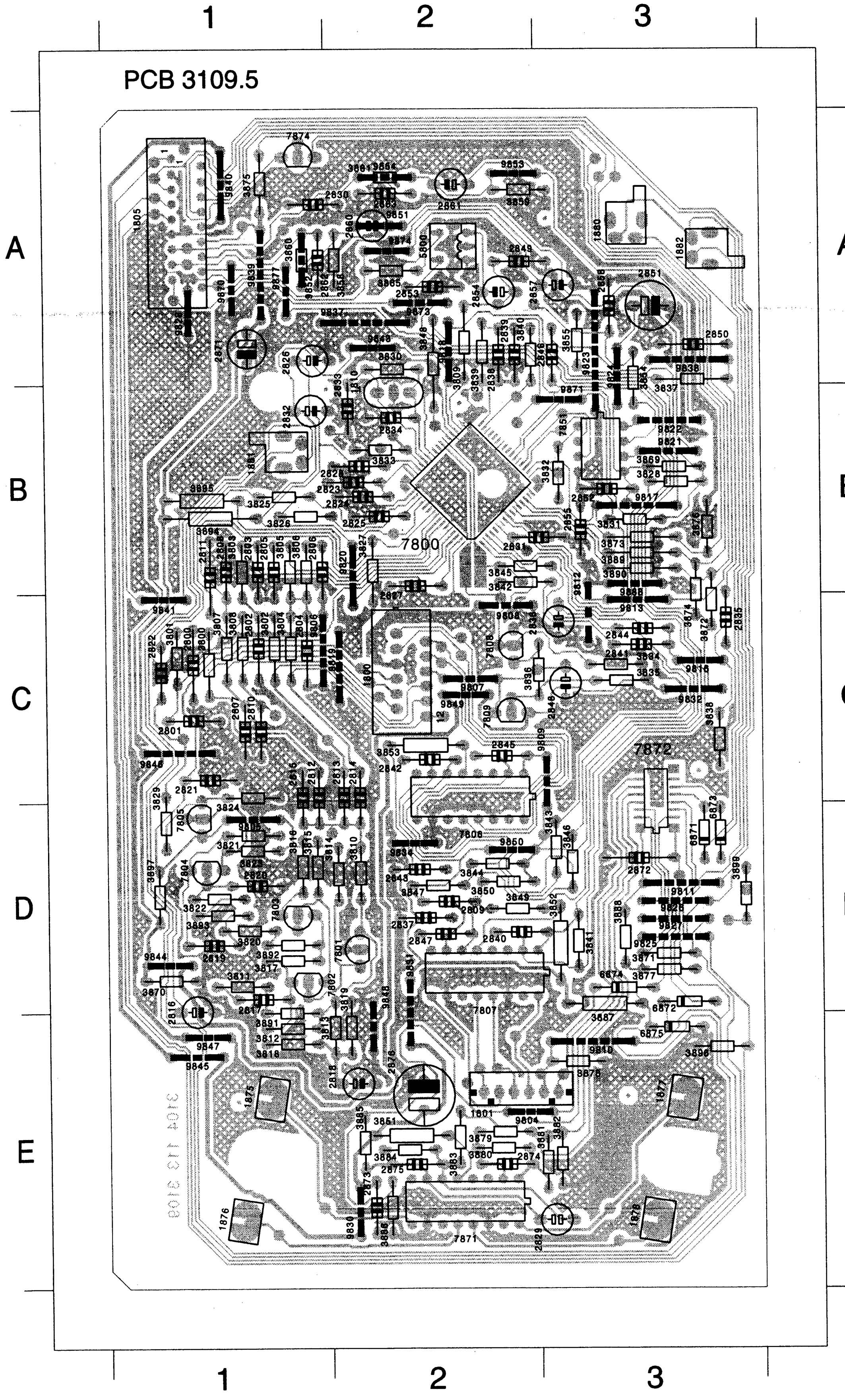
Component numbers:	
Servo-decoder:	x800 -> x850
Audio-part	x851 -> x870
Interface + Loader	x871 -> x899


OADER CONTROL
7871 -2A TDA7073A
7871 -2B TDA7073A
CARROUSEL MOTOR
TRAY MOTOR
INNER SWITCH
CDM SWITCH
O/C SWITCH
CAR SWITCH
1N4148
SERVO DRIVERS
7807-2A TDA7073A
7806 -2A TDA7073A
7806 -2B TDA7073A
7807 -2B TDA7073A
TTM+
TTM-
RAD+
RAD-
FOC+
FOC-
SL.OUT+
SL.OUT-
DISC MOTOR
TRACK
FOCUS
SLED MOTOR
CDM12.1 DISC DRIVE
DECODER
7800 SAA7378
ADC
MICROPROCESSOR INTERFACE & CONTROL
OUTPUT STAGE
SUBCODE PROCESSOR
PEAK DETECT
DIGITAL PLL
EFM DEMOD
AUDIO PROCESSOR
SERIAL DATA INTERFACE
SRAM
ERROR CORRECTOR
FLAGS
RAM ADDRESSER
EBU INTERFACE
VREF GEN
FRONT END
DECODER MICRO PROCESSOR INTERFACE
TIMING
TEST
VERSATILE INTERFACE
KILL
MOTOR CONTROL
1810 8.46MHz
7809 BC328
7808 BC548
HF-OUT
CPU
1805 - 2 PORE
DAC AUDIO
CL
DA
WS
0.5uS/DIV
LSB
MSB
LEFT CHANNEL
RIGHT CHANNEL
7851 TDA1311A
BCK
WS
DATA
CONTROL & TIMING
LEFT I/O
RIGHT I/O
I/V
VOL
VOR
VDD
GND
GNDA
LEFT
RIGHT
AUDIO OUT
PULSE DENSITY MODULATION
ACCELERATE
BRAKE
PULSE WIDTH MODULATION
PULSES DURING NEXT, PREVIOUS, STOP
DURING FOCUS SEARCH
4V
1s
ELECTRONIC VOLTMETER
DC VOLTAGES MEASURED IN PLAY MODE
9626
3109_0330_A_BL

Component numbers:	
Servo-decoder:	x800 -> x850
Audio-part	x851 -> x870
Interface + Loader	x871 -> x899

1800	D24
1800	F24
1800	F24
1800	D24
1800	N 3
1800	O 3
1800	L 3
1800	K 3
1800	H 3
1800	H 3
1800	J 3
1800	I 3
1801	A24
1801	A24
1801	B24
1801	C24
1801	G24
1801	H24
1805	B 3
1805	O 9
1805	D 3
1805	E 3
1805	F 3
1805	G 3
1805	C 3
1805	C 3
1805	E 3
1805	A 3
1805	B 3
1805	A 3
1805	M24
1805	L24
1805	K24
1810	N11
1880	D 9
1881	D 9
1882	E 9
2800	H 5
2801	H 6
2802	I 5
2803	I 6
2804	I 5
2805	I 6
2806	J 6
2807	J 5
2808	J 6
2809	H21
2810	K 5
2811	K 6
2812	K 3
2813	K 4
2814	K 4
2815	L 4
2816	L 4
2817	N 5
2818	O 5
2819	M 7
2820	M 7
2821	M 6
2822	J 9
2823	J10
2824	J10
2825	J 8
2826	G10
2827	G11
2828	G11
2829	D11
2830	O21
2831	F15
2832	F16
2835	I19
2836	I19
2837	B20
2838	B19
2839	C19
2840	B20
2841	D19
2842	D20
2843	E20
2844	F19
2845	F20
2846	H19
2847	H20
2848	O16
2850	L10
2851	K20
2852	K21
2855	N21
2860	K22
2861	M22
2862	K24
2863	M24
2872	A 7
2873	A12
2874	B12
2875	D12
2876	A 5
3800	H 5
3801	H 6
3802	H 5
3803	H 6
3804	I 5
3805	I 6
3806	J 6
3807	J 6
3808	K 6
3810	M 4
3811	N 5
3812	N 5
3813	N 5
3814	L 5
3815	L 5
3816	L 6
3817	M 6
3818	N 6
3819	O 6
3820	M 6
3821	N 7
3822	M 7
3823	L 8
3824	M 8
3825	J 9
3826	J10
3827	H10
3828	M13
3829	M 8
3830	M11
3831	M13
3832	J18
3833	M12
3834	N18
3835	N17
3836	N17
3837	H18
3838	I18
3839	B19
3840	C19
3841	C20
3842	D19
3843	D20
3844	D20
3845	F19
3846	F20
3847	F20
3848	G19
3849	G19
3850	H20
3851	A12
3852	A21
3853	E21
3858	K23
3859	M23
3860	K23
3861	M23
3869	J20
3870	A 3
3871	C 4
3872	E 4
3873	F11
3874	E 5
3875	F 6
3876	F 7
3877	E 4
3878	E 9
3879	B11
3880	B11
3881	B11
3882	B10
3883	C10
3884	D11
3885	D10
3886	D10
3887	A 5
3888	C 4
3889	G11
3890	F11
3891	N 4
3892	M 6
3893	M 7
3894	G 9
3895	F15
3896	B 4
3897	L 5
6871	D 9
6872	D 9
6873	E 9
6874	C 9
6875	B 6
7800	H10
7801	M 4
7802	M 5
7803	M 6
7804	M 7
7805	M 8
7806	E21
7806	C21
7807	B21
7807	G21
7808	N17
7809	N17
7851	K19
7871	A12
7871	C12
7872	B 6
7874	F 6

CDC LAYOUT-COMPONENT VIEW



1800	C 2
1801	E 2
1805	A 1
1810	B 2
1875	E 1
1876	E 1
1877	E 3
1878	E 3
1880	A 3
1881	B 1
1882	A 3
2800	C 1
2801	C 1
2802	C 1
2803	B 1
2804	C 1
2805	B 1
2806	B 1
2807	C 1
2808	B 1
2809	D 2
2810	C 1
2811	B 1
2812	C 1
2813	C 2
2814	C 2
2815	C 1
2816	D 1
2817	D 1
2818	E 2
2819	D 1
2820	D 1
2821	C 1
2822	C 1
2823	B 2
2824	B 2
2825	B 2
2826	A 1
2827	B 2
2828	B 2
2829	E 3
2830	A 1
2831	B 3
2832	B 1
2833	B 2
2834	B 2
2835	C 3
2836	C 3
2837	D 2
2838	A 2
2839	A 2
2840	D 2
2841	C 3
2842	C 2
2843	D 2
2844	C 3
2845	C 2
2846	A 3
2847	D 2
2848	C 3
2849	A 2
2850	A 3
2851	A 3
2852	B 3
2853	A 2
2854	A 2
2855	B 3
2857	A 3
2858	A 3
2860	A 2
2861	A 2
2862	A 1
2863	A 2
2871	A 1
2872	D 3
2873	E 2
2874	E 2
2875	E 2
2876	E 2
3800	C 1
3801	C 1
3802	C 1
3803	B 1
3804	C 1
3805	B 1
3806	B 1
3807	C 1
3808	C 1
3809	A 2
3810	D 2
3811	D 1
3812	E 1
3813	E 2
3814	D 2
3815	D 1
3816	D 1
3817	D 1
3818	E 1
3819	E 2
3820	D 1
3821	D 1
3822	D 1
3823	D 1
3824	C 1
3825	B 1
3826	B 1
3827	B 2
3828	B 3
3829	D 1
3830	A 2
3831	B 3
3832	B 3
3833	B 2
3834	C 3
3835	C 3
3836	C 3
3837	A 3
3838	C 3
3839	A 2
3840	A 2
3841	D 3
3842	B 2
3843	D 3
3844	D 2
3845	B 2
3846	D 3
3847	D 2
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3849	D 2
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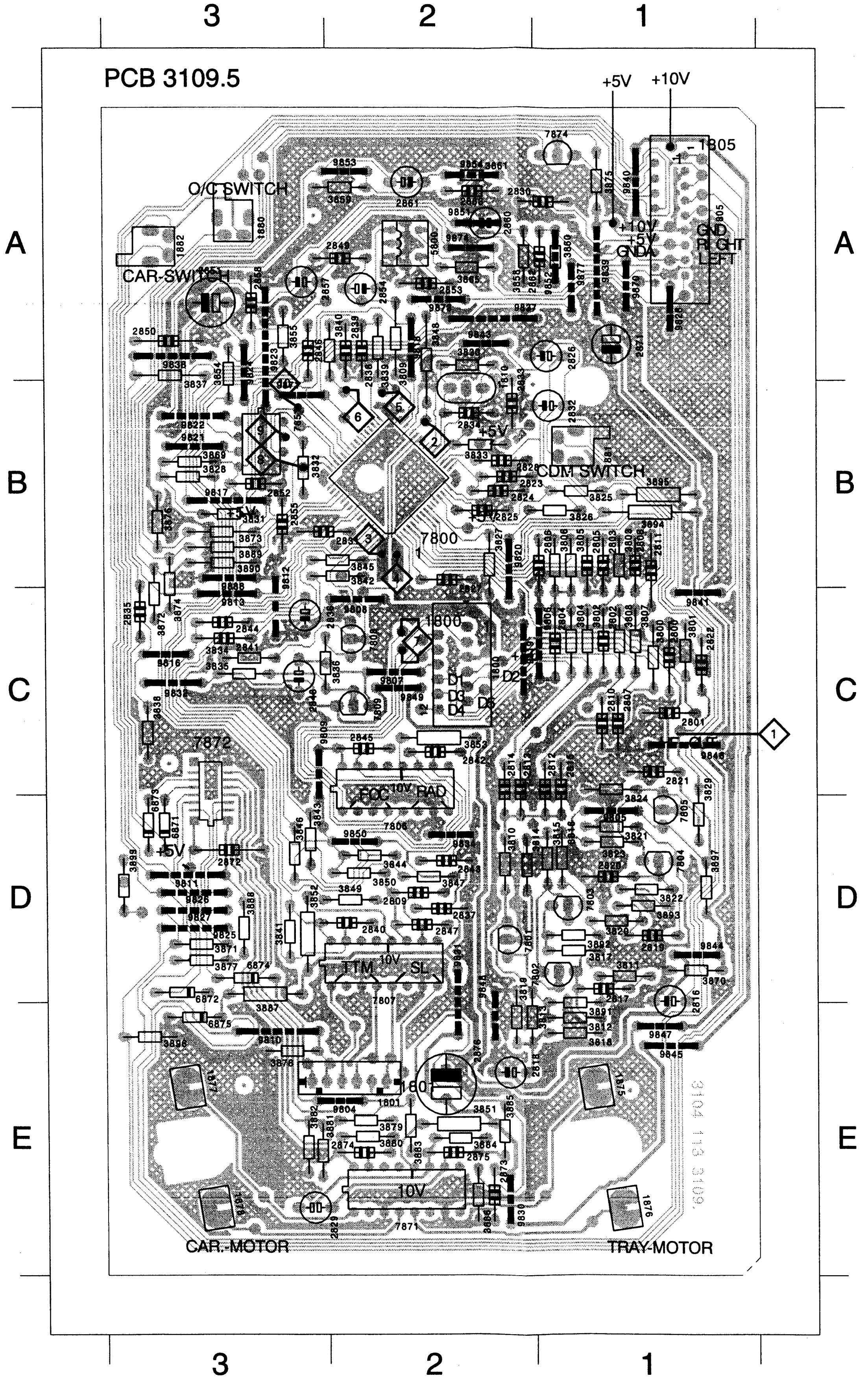
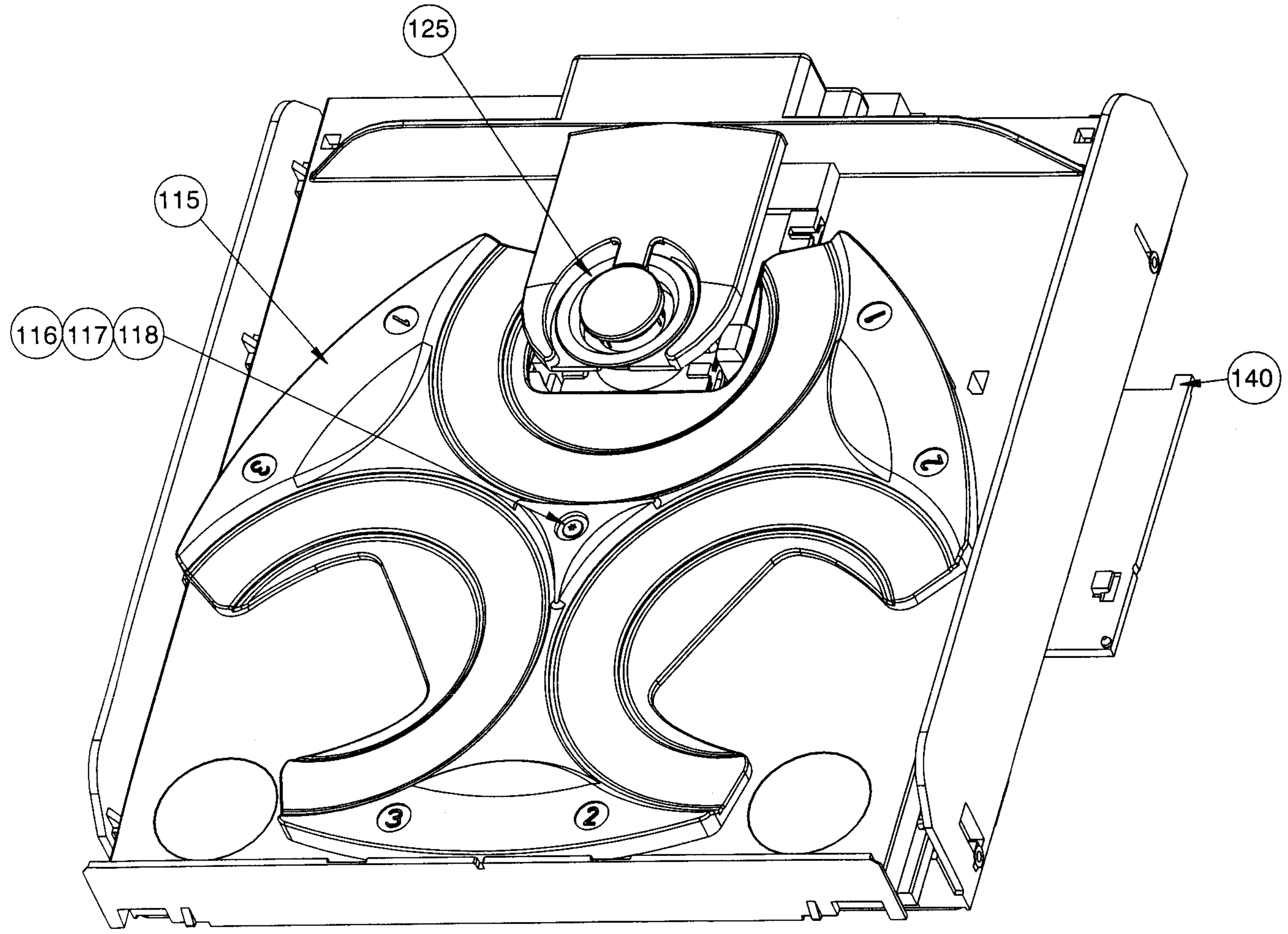
3851	E 2
3852	D 3
3853	C 2
3854	A 3
3855	A 3
3858	A 2
3859	A 2
3860	A 1
3861	A 2
3865	A 2
3869	B 3
3870	D 1
3871	D 3
3872	C 3
3873	B 3
3874	B 3
3875	A 1
3876	B 3
3877	D 3
3878	E 3
3879	E 2
3880	E 2
3881	E 3
3882	E 3
3883	E 2
3884	E 2
3885	E 2
3886	E 2
3887	D 3
3888	D 3
3889	B 3
3890	B 3
3891	E 1
3892	D 1
3893	D 1
3894	B 1
3895	B 1
3896	E 3
3897	D 1
3899	D 3
5800	A 2
6871	D 3
6872	D 3
6873	D 3
6874	D 3
6875	E 3
7801	D 2
7802	D 1
7803	D 1
7804	D 1
7805	D 1
7806	C 2
7807	D 2
7808	C 2
7809	C 2
7851	B 3
7871	E 2
7874	A 1
9804	E 2
9805	D 1
9806	C 1
9807	C 2
9808	C 2
9809	C 3
9810	E 3
9811	D 3
9812	C 3
9813	C 3
9816	C 3
9817	B 3
9818	A 2
9819	C 2
9820	B 2
9821	B 3
9822	B 3
9823	A 3
9824	A 3
9825	D 3
9826	D 3
9827	D 3
9828	A 1
9830	E 2
9831	E 2
9832	C 3
9834	D 2
9837	A 2
9838	A 3
9839	A 1
9840	A 1
9841	C 1
9843	A 2
9844	D 1
9845	E 1
9846	C 1
9847	E 1
9848	E 2
9849	C 2
9850	D 2
9851	A 2
9852	A 1
9853	A 2
9854	A 2
9870	A 1
9871	B 3
9873	A 2
9874	A 2
9877	A 1
9888	B 3

CDC LAYOUT-COPPER VIEW



7800	B 2
7872	C 3

CDC EXPLODED VIEW I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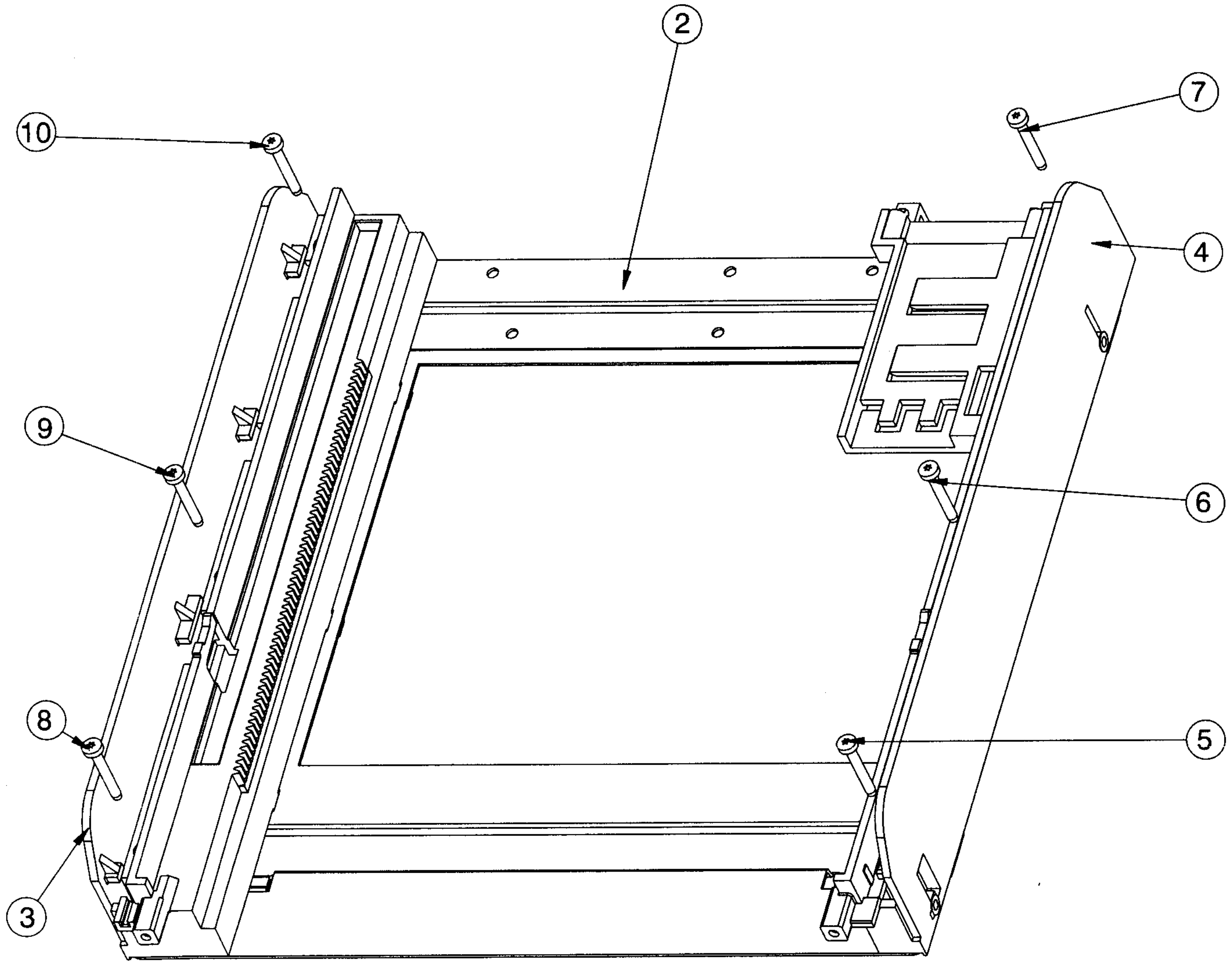
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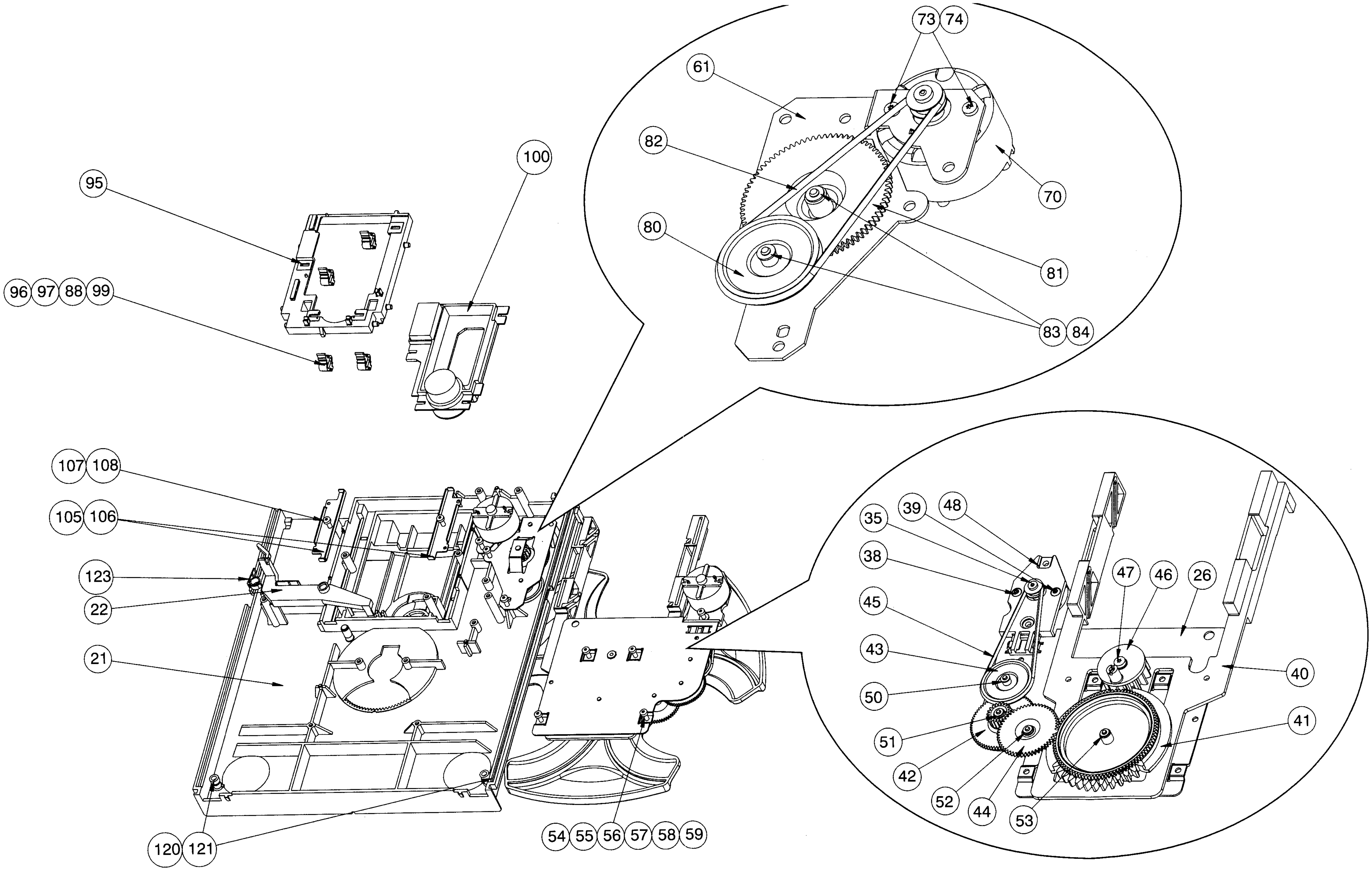
CDC EXPLODED VIEW II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MECHANICAL PARTS

3	4822 463 11008	GUIDE LEFT
4	4822 463 11009	GUIDE RIGHT
21	4822 441 11615	DRAWER
22	4822 402 10088	TUMBLER
35	4822 361 10753	CARROUSEL MOTOR
38	4822 502 12548	SCREW M2.6 X 3.5
39	4822 502 12548	SCREW M2.6 X 3.5
40	4822 463 11011	IDE
41	4822 522 10509	CONTROL DISC
42	4822 522 10492	GEAR WHEEL
43	4822 528 10937	PULLEY
44	4822 522 10493	IDLER WHEEL
45	4822 358 10115	BELT
46	4822 466 10735	ECCENTRIC GEAR WHEEL
50	4822 532 12364	WASHER
51	4822 532 12364	WASHER
52	4822 532 12364	WASHER
53	4822 532 12364	WASHER
70	4822 361 10753	TRAY MOTOR
73	4822 502 12548	SCREW M 2.6 X 3.5
74	4822 502 12548	SCREW M 2.6 X 3.5
80	4822 528 10937	PULLEY
81	4822 522 10494	GEAR WHEEL
82	4822 358 10115	BELT
83	4822 532 12364	WASHER
84	4822 532 12364	WASHER
95	4822 404 10894	CDM SUPPORT
96	4822 325 50215	SUSPENSION
97	4822 325 50215	SUSPENSION
98	4822 325 50215	SUSPENSION
99	4822 325 50215	SUSPENSION
100	4822 691 30278	CDM-12.1 MECHANISM
115	4822 466 10736	CARROUSEL
117	4822 532 12365	BUSH
120	4822 532 51756	DAMPING GROMMET
121	4822 532 51756	DAMPING GROMMET
123	4822 402 10085	SWITCH BRACKET
125	4822 532 52386	CLAMPER
140	4822 466 10734	FLEX CABLE PROTECTION PLATE

MISCELLANEOUS

1880	4822 276 13503	OPEN/CLOSE SWITCH
1881	4822 276 13503	CDM POSITION SWITCH
1882	4822 276 13503	CARROUSEL SWITCH
8002	4822 320 11313	FLEXFOIL 15P
	4822 390 10136	LUBRICATING GREASE

CRYSTAL

1810	4822 242 73557	CRYSTAL 8.46 MHZ

CAPACITORS

2800	4822 126 10053	180pF 10%
2801	4822 122 10466	220pF 10% 50V
2802	4822 126 10053	180pF 10%
2803	4822 122 10466	220pF 10% 50V
2804	4822 126 12787	330pF 10% 50V
2805	4822 122 10466	220pF 10% 50V
2806	4822 122 10466	220pF 10% 50V
2807	4822 126 12878	1.5nF 10% 16V
2808	4822 122 10466	220pF 10% 50V
2809	4822 126 12882	100nF +80-20% 50V
2810	4822 122 10459	560pF 10% 50V
2811	4822 122 10466	220pF 10% 50V
2812	4822 122 33848	47pF 5% 50V
2813	4822 122 33848	47pF 5% 50V
2814	4822 122 33195	100pF 10% 50V
2815	4822 126 12573	18pF 5% 50V
2816	4822 124 23624	47μF 20% 16V
2817	4822 126 12787	330pF 10% 50V
2818	4822 124 23624	47μF 20% 16V
2819	4822 126 12787	330pF 10% 50V
2820	4822 126 10053	180pF 10%
2821	4822 126 11585	22nF +80-20% 25V
2822	4822 126 12339	2.2nF 10%
2823	4822 122 33848	47pF 5% 50V
2824	4822 126 11585	22nF +80-20% 25V
2825	4822 126 12882	100nF +80-20% 50V
2826	4822 124 23624	47μF 20% 16V
2827	4822 126 12882	100nF +80-20% 50V
2828	4822 126 12882	100nF +80-20% 50V
2829	4822 124 80865	10μF 20% 25V
2830	4822 126 12882	100nF +80-20% 50V
2831	4822 126 12882	100nF +80-20% 50V
2832	4822 124 23624	47μF 20% 16V
2835	4822 126 12882	100nF +80-20% 50V
2836	4822 124 23624	47μF 20% 16V
2837	4822 126 12882	100nF +80-20% 50V
2838	4822 126 12882	100nF +80-20% 50V
2839	4822 126 12882	100nF +80-20% 50V
2840	4822 126 12882	100nF +80-20% 50V
2841	4822 122 10574	1.2nF 10% 16V
2842	4822 121 51387	10nF 20% 16V
2843	4822 126 12882	100nF +80-20% 50V
2844	4822 122 10574	1.2nF 10% 16V
2845	4822 121 51387	10nF 20% 16V
2846	4822 126 11585	22nF +80-20% 25V
2847	4822 126 12882	100nF +80-20% 50V
2848	4822 124 23624	47μF 20% 16V
2850	4822 122 33197	1nF 10% 50V
2851	4822 124 41997	470μF 10V
2852	4822 126 12882	100nF +80-20% 50V
2855	4822 126 12882	100nF +80-20% 50V
2856	4822 126 12882	100nF +80-20% 50V
2860	4822 124 41579	10μF 20% 50V
2861	4822 124 41579	10μF 20% 50V
2862	4822 126 12339	2.2nF 10%
2863	4822 126 12339	2.2nF 10%
2872	4822 126 12882	100nF +80-20% 50V
2873	4822 126 12882	100nF +80-20% 50V
2874	4822 126 11585	22nF +80-20% 25V
2875	4822 126 11585	22nF +80-20% 25V
2876	4822 124 23794	470μF 20% 16V
2881	4822 126 12882	100nF +80-20% 50V

RESISTORS

3800	4822 116 52239	120k 5% 0.5W
3801	4822 116 83864	10k 5% 0.5W
3802	4822 116 52239	120k 5% 0.5W
3803	4822 116 83864	10k 5% 0.5W
3804	4822 116 52291	56k 5% 0.5W
3805	4822 116 83864	10k 5% 0.5W
3806	4822 116 83864	10k 5% 0.5W
3807	4822 116 83864	10k 5% 0.5W
3808	4822 116 83864	10k 5% 0.5W
3810	4822 050 11002	1k 1% 0.4W
3811	4822 116 52267	30k 5% 0.5W
3812	4822 116 52272	330k 5% 0.5W
3813	4822 116 52284	47k 5% 0.5W
3814	4822 116 83882	39k 5% 0.5W
3815	4822 050 11002	1k 1% 0.4W
3816	4822 116 52175	100Ω 5% 0.5W
3817	4822 050 11002	1k 1% 0.4W
3818	4822 116 52175	100Ω 5% 0.5W
3819	4822 116 52222	390Ω 5% 0.5W
3820	4822 116 52223	430Ω 5% 0.5W
3821	4822 116 52249	1k8 5% 0.5W
3822	4822 116 52223	430Ω 5% 0.5W
3823	4822 116 52249	1k8 5% 0.5W
3824	4822 116 52269	3k3 5% 0.5W
3825	4822 116 52256	2k2 5% 0.5W
3826	4822 116 52257	22k 5% 0.5W
3827	4822 116 52278	390k 5% 0.5W
3828	4822 116 52257	22k 5% 0.5W
3829	4822 116 52175	100Ω 5% 0.5W
3830	4822 116 52235	1M 5% 0.5W
3831	4822 116 52257	22k 5% 0.5W
3832	4822 116 52215	220Ω 5% 0.5W
3833	4822 116 83864	10k 5% 0.5W
3834	4822 116 83864	10k 5% 0.5W
3835	4822 116 52256	2k2 5% 0.5W
3836	4822 050 11002	1k 1% 0.4W
3837	4822 050 11002	1k 1% 0.4W
3838	4822 050 11002	1k 1% 0.4W
3839	4822 116 52245	150k 5% 0.5W
3840	4822 116 52245	150k 5% 0.5W
3841	4822 116 52289	5k6 5% 0.5W
3842	4822 116 83864	10k 5% 0.5W
3843	4822 116 52303	8k2 5% 0.5W
3844	4822 116 52224	470Ω 5% 0.5W
3845	4822 116 83864	10k 5% 0.5W
3846	4822 116 52303	8k2 5% 0.5W
3847	4822 116 52224	470Ω 5% 0.5W
3848	4822 116 52303	8k2 5% 0.5W
3849	4822 116 52303	8k2 5% 0.5W
3850	4822 116 52224	470Ω 5% 0.5W
3851	4822 052 10338	3Ω3 5% 0.33W
3852	4822 052 10338	3Ω3 5% 0.33W
3853	4822 052 10338	3Ω3 5% 0.33W
3858	4822 116 52257	22k 5% 0.5W
3859	4822 116 52257	22k 5% 0.5W
3860	4822 116 52224	470Ω 5% 0.5W
3861	4822 116 52224	470Ω 5% 0.5W
3869	4822 116 52175	100Ω 5% 0.5W
3870	4822 116 52226	560Ω 5% 0.5W
3871	4822 116 83864	10k 5% 0.5W

ELECTRICAL PARTLIST CDC3 INTERFACE BOARD

RESISTORS

3872	4822 116 83864	10k 5% 0.5W
3873	4822 116 52224	470Ω 5% 0.5W
3874	4822 116 83864	10k 5% 0.5W
3875	4822 116 83864	10k 5% 0.5W
3876	4822 116 83874	220k 5% 0.5W
3877	4822 116 83864	10k 5% 0.5W
3878	4822 116 83864	10k 5% 0.5W
3879	4822 116 83864	10k 5% 0.5W
3880	4822 116 52219	330Ω 5% 0.5W
3881	4822 116 83864	10k 5% 0.5W
3882	4822 116 52284	47k 5% 0.5W
3883	4822 116 52234	100k 5% 0.5W
3884	4822 116 52276	3k9 5% 0.5W
3885	4822 116 52234	100k 5% 0.5W
3886	4822 116 52284	47k 5% 0.5W
3887	4822 052 10221	220Ω 5% 0.33W
3888	4822 116 83864	10k 5% 0.5W
3894	4822 052 10338	3Ω3 5% 0.33W
3895	4822 052 10338	3Ω3 5% 0.33W
3896	4822 116 83864	10k 5% 0.5W
3897	4822 116 52175	100Ω 5% 0.5W

DIODES

6871	4822 130 30621	1N4148
6872	4822 130 30621	1N4148
6873	4822 130 30621	1N4148
6874	4822 130 30621	1N4148
6875	4822 130 34233	BZX79-C5V1

INTERGRATED CIRCUITS

7800	4822 209 12752	SAA7378GP/M1
7806	4822 209 32852	TDA7073A/N2
7807	4822 209 32852	TDA7073A/N2
7851	4822 209 32421	TDA1311A/N2
7871	4822 209 32852	TDA7073A/N2
7872	5322 209 11306	HEF4094BT

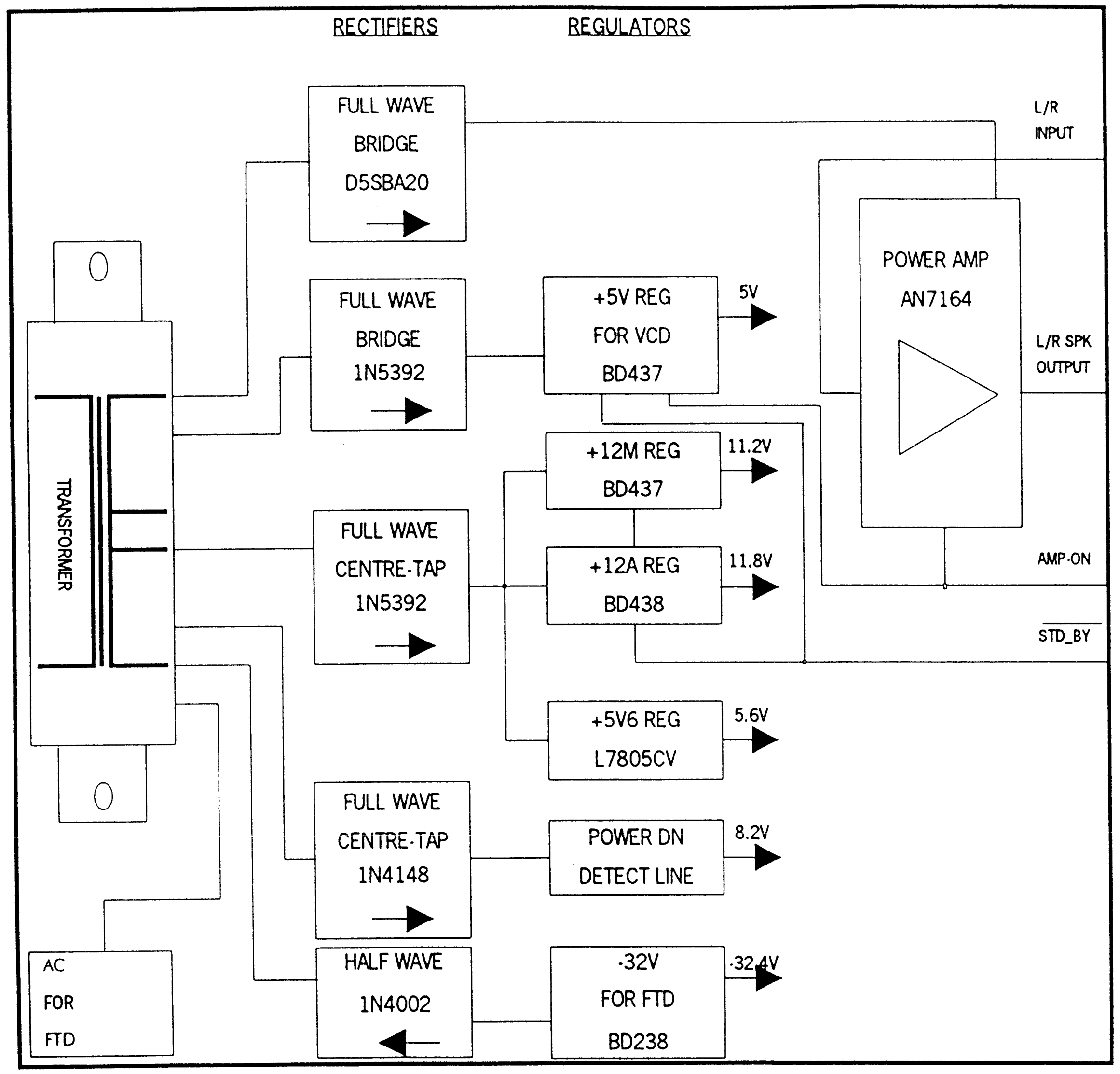
TRANSISTORS

7801	4822 130 40902	BF240
7802	4822 130 40937	BC548B
7803	4822 130 44197	BC558B
7804	4822 130 40937	BC548B
7805	4822 130 40937	BC548B

TRANSISTORS

7808	4822 130 40937	BC548B
7809	4822 130 41715	BC328-40
7874	4822 130 40937	BC548B

POWER BOARD


RECTIFIERS
REGULATORS
FULL WAVE BRIDGE D5SBA20
FULL WAVE BRIDGE 1N5392
FULL WAVE CENTRE-TAP 1N5392
FULL WAVE CENTRE-TAP 1N4148
HALF WAVE 1N4002
+5V REG FOR VCD BD437
5V
+12M REG BD437
11.2V
+12A REG BD438
11.8V
+5V6 REG L7805CV
5.6V
POWER DN DETECT LINE
8.2V
-32V FOR FTD BD238
-32.4V
POWER AMP AN7164
L/R INPUT
L/R SPK OUTPUT
AMP-ON
STD_BY
TRANSFORMER
AC FOR FTD

WARNING : *If the power amplifier heatsink is not attached to the power amplifier during testing, do not make the amplifier deliver more than 500mW per channel. It is advisable to inject signal one channel at a time whenever possible and to remove all input signal immediately after test.*

CONNECTOR 12 TO 1210

o	1	PA	AC input to power amplifier rectifier
o	2	PA	AC input to power amplifier rectifier *[Note:Pin1 is shorted to Pin 2]*
o	3	PA	AC input to power amplifier rectifier
o	4	PA	AC input to power amplifier rectifier *[Note:Pin 3 is shorted to Pin 4]*
o	5	+12V/+5V6	AC input to +12V & +5V6 rectifier
o	6	GND	Centre-tap of secondary winding of Pin 5 ,7 and 8
o	7	+12V/+5V6	AC input to +12V & +5V6 rectifier
o	8	-35V	AC input to FTD rectifier
o	9	FTD	FTD filament voltage
o	10	FTD	FTD filament voltage

CONNECTOR 1222 — FTD SUPPLY AND uP CONTROL SIGNALS

o	1	STDBY	Standby signal from microprocessor
o	2	~F1	AC voltage for FTD filament
o	3	~F2	AC voltage for FTD filament
o	4	-32V	-32.4V voltage for FTD grid
o	5	PWD DN	Power down signal to microprocessor

CONNECTOR 1223 — AF SIGNAL AND SUPPLY

o	1	L	Left input for power amplifier
o	2	⊥a	AF ground
o	3	R	Right input for power amplifier
o	4	AMP_ON	Control from up to switch power amplifier and VCD regulator to standby
o	5	+12M	+12V for tapedeck motors and CD mechanisms
o	6	⊥B	Ground for +12A
o	7	+12A	+12V for analog circuitries
o	8	⊥D	Motor and Digital ground
o	9	+5V6	+5V6 for set uP and VCD uP

CONNECTOR 1224 — AF SIGNAL AND SUPPLY *[OPTION]*

[Connections as 1223 but with digital ground and motor ground seperated]

o	1	L	Left input for power amplifier
o	2	⊥a	AF ground
o	3	R	Right input for power amplifier
o	4	AMP_ON	Control from uP to switch power amplifier and VCD regulator to standby
o	5	+12A	+12V for analog circuitries
o	6	⊥B	Ground for +12A
o	7	+12M	+12V for tapedeck motors and CD mechanisms
o	8	⊥M	Motor ground
o	9	+5V6	+5V6 for set up and VCD up
o	10	⊥D	Digital ground

CONNECTOR 1237 — VCD SUPPLY *[OPTION]*

o	1	+VCD	+5V for VCD module
o	2	+VCD	+5V for VCD module
o	3	+Vsl	+5V for VCD uP-SRAM
o	4	GND	Ground
o	5	GND	Ground
o	6	+VA	+12V for VCD servo drivers

CONNECTOR 13 TO 1231 *[OPTION]*

o	1	VCD	AC input to VCD rectifier
o	2	VCD	AC input to VCD rectifier

12 C 8	1207 D 6	1222 L14	1240 B11	2222 B10	2232 D11	2240 E10
1201 E 1	1208 F 6	1223 D22	1290 G23	2224 B11	2233 D11	2241 C13
1202 D 3	1210 C 7	1224 D23	13 F 8	2225 B11	2234 B14	2242 C14
1205 E 1	1211 D 6	1231 F 7	2220 A 9	2230 C 9	2235 A16	2243 E11
1206 C 6	1212 E 6	1237 A22	2221 A10	2231 C10	2239 H22	2244 E11

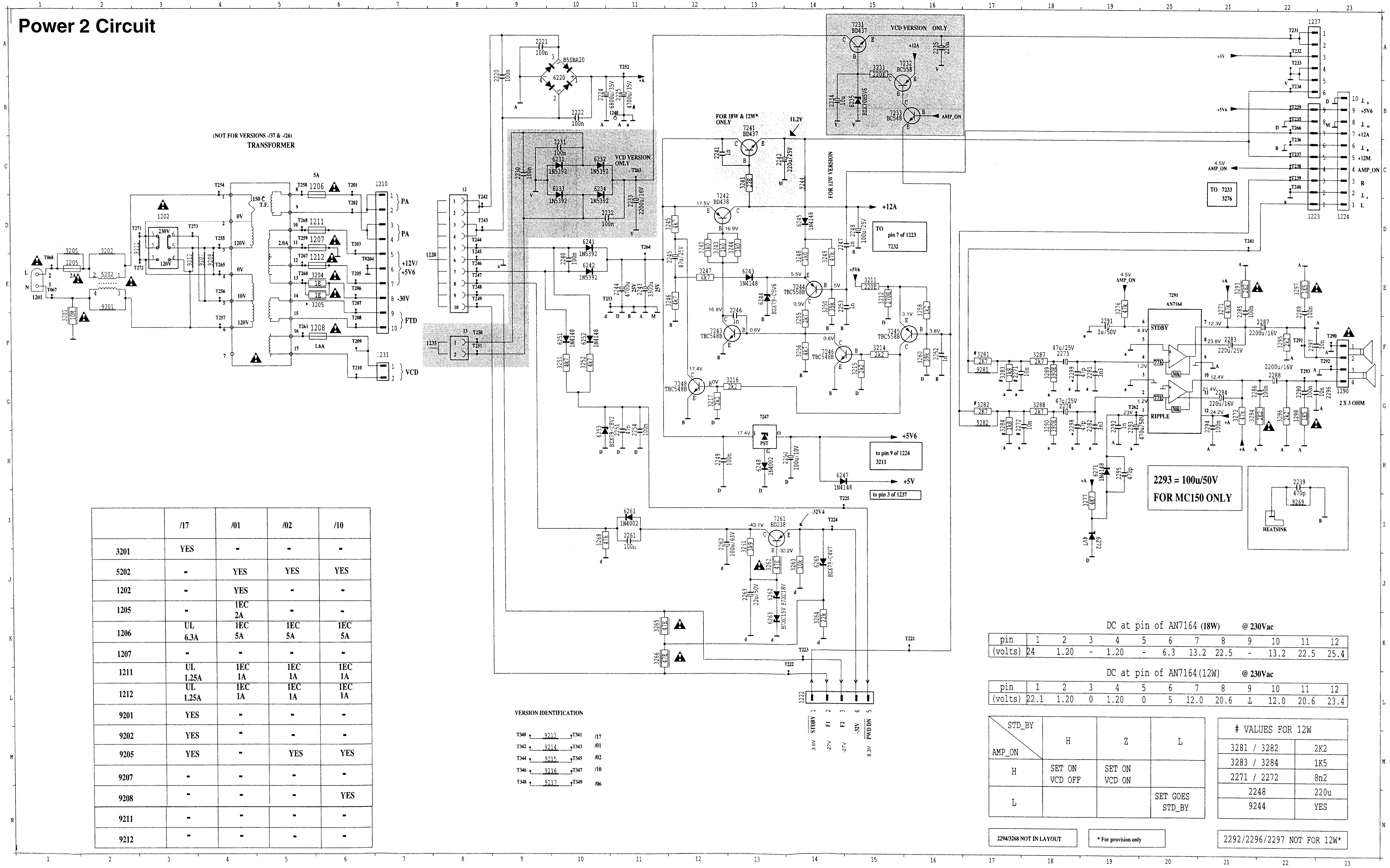
2245 E12	2250 H14	2261 I11	2273 F19	2284 G21	2289 E22	2294 G21
2246 E13	2251 G11	2262 I12	2274 G18	2285 E21	2290 G22	2295 H19
2247 D15	2252 F16	2263 J13	2281 G19	2286 G21	2291 F19	2296 G23
2248 D15	2253 E15	2271 F18	2282 G19	2287 F22	2292 G19	2297 F22
2249 H12	2254 G11	2272 G18	2283 F21	2288 G22	2293 G19	2298 G18

2299 G19	3212 E16	3231 A15	3245 D12	3250 E15	3258 E16	3264 K14
3201 F 1	3214 F16	3241 C13	3246 E12	3251 F10	3260 F16	3265 K11
3204 E 6	3215 F15	3242 D13	3247 E12	3252 F10	3261 I13	3266 K11
3205 E 6	3216 G13	3243 D13	3248 E14	3255 F14	3262 J13	3268 I10
3211 E15	3217 G13	3244 D13	3249 E15	3256 F14	3263 J14	3271 E21

3272 G21	3283 F18	3290 G18	3297 E22	6232 C10	6242 E10	6248 H13
3276 E19	3284 G17	3293 E21	3298 G22	6233 C10	6243 E13	6251 F10
3277 I19	3287 F18	3294 G21	5202 E 2	6234 C10	6244 E14	6252 F10
3281 F17	3288 G18	3295 F22	6220 A10	6235 B15	6245 D14	6253 H10
3282 G17	3289 F18	3296 G22	6231 C10	6241 D10	6247 H14	6261 I11

6262 J13	7231 A15	7243 F13	7248 G12	9205 D 1	9213 M 9	9244 C14
6263 K13	7232 A15	7244 E14	7261 I13	9207 E 4	9214 M 9	9269 I22
6265 J14	7233 B15	7245 F16	7291 E20	9208 E 4	9215 M 9	9281 F17
6271 H19	7241 B13	7246 F15	9201 E 2	9211 D 3	9216 M 9	9282 G17
6272 I19	7242 D13	7247 G13	9202 D 2	9212 E 3	9217 M 9	

Power 2 Circuit



(NOT FOR VERSIONS -/37 & -/26)
TRANSFORMER
VCD VERSION ONLY
FOR 18W & 12W* ONLY
FOR 12W VERSION
7231 BD437
7232 BC558
7233 BC548
7241 BD437
7242 BD438
7243 TBC548B
7244 TBC558B
7245 TBC558B
7246 TBC548B
7248 TBC548B
7261 BD238
7291 AN7164
7247 PST
6220 B5SBA20
+12A
+5V6
+5V
+A
AMP_ON
4.5V AMP_ON
TO pin 7 of 1223 7232
to pin 9 of 1224 3211
to pin 3 of 1237
TO 7233 3276
2293 = 100u/50V FOR MC150 ONLY
HEATSINK
2 X 3 OHM
STDBY
RIPPLE
PA
+12V/ +5V6
-30V
FTD
VCD
STDBY
F1
F2
-32V
PWD DN

	/17	/01	/02	/10
3201	YES	-	-	-
5202	-	YES	YES	YES
1202	-	YES	-	-
1205	-	1EC 2A	-	-
1206	UL 6.3A	1EC 5A	1EC 5A	1EC 5A
1207	-	-	-	-
1211	UL 1.25A	1EC 1A	1EC 1A	1EC 1A
1212	UL 1.25A	1EC 1A	1EC 1A	1EC 1A
9201	YES	-	-	-
9202	YES	-	-	-
9205	YES	-	YES	YES
9207	-	-	-	-
9208	-	-	-	YES
9211	-	-	-	-
9212	-	-	-	-

VERSION IDENTIFICATION

T340 9213 T341 /17
T342 9214 T343 /01
T344 9215 T345 /02
T346 9216 T347 /10
T348 9217 T349 /06

DC at pin of AN7164 **(18W)** **@ 230Vac**

pin	1	2	3	4	5	6	7	8	9	10	11	12
(volts)	24	1.20	-	1.20	-	6.3	13.2	22.5	-	13.2	22.5	25.4

DC at pin of AN7164(12W) **@ 230Vac**

pin	1	2	3	4	5	6	7	8	9	10	11	12
(volts)	22.1	1.20	0	1.20	0	5	12.0	20.6	⊥	12.0	20.6	23.4

STD_BY / AMP_ON	H	Z	L
H	SET ON VCD OFF	SET ON VCD ON	
L			SET GOES STD_BY

# VALUES FOR 12W	
3281 / 3282	2K2
3283 / 3284	1K5
2271 / 2272	8n2
2248	220u
9244	YES

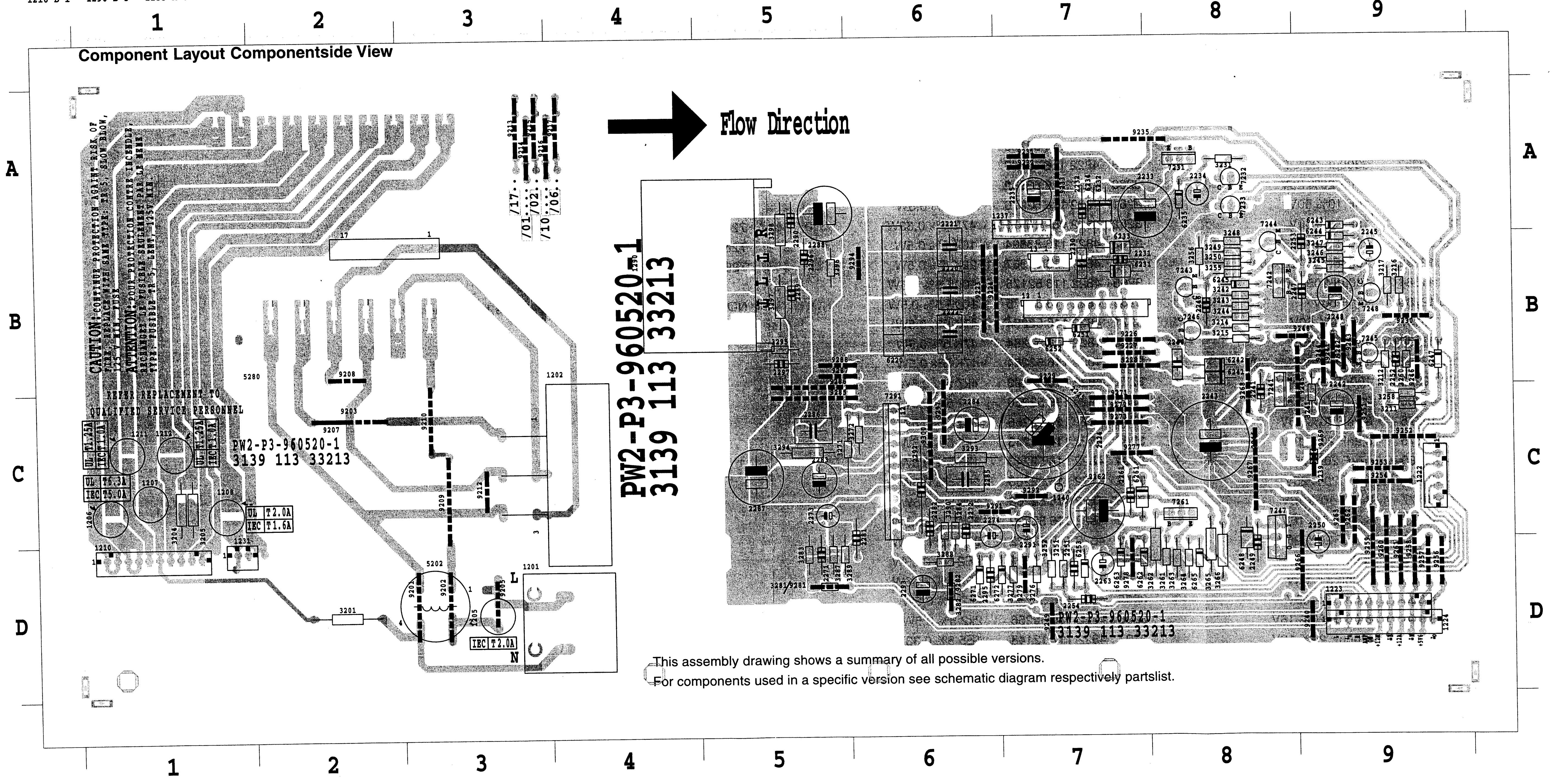
2294/3268 NOT IN LAYOUT

*** For provision only**

2292/2296/2297 NOT FOR 12W*

12	B	7
13	B	7
1201	D	4
1202	C	3
1205	D	3
1206	C	1
1207	C	1
1208	C	1
1210	D	1
1211	C	1
1212	C	1
1222	C	9
1223	D	9
1224	D	9
1231	D	1
1237	A	7
1240	C	7
1290	B	5
2220	B	6
2221	B	6
2222	B	6
2224	C	7
2225	C	7
2230	B	7
2231	B	7
2232	A	7
2233	A	8
2234	A	8
2235	A	7
2239	C	9
2240	B	8
2241	C	8
2242	C	9
2243	C	8
2244	C	8
2245	B	9
2246	B	8
2247	B	9
2248	B	9
2249	D	8
2250	D	9
2251	D	7
2252	B	9
2253	B	9
2254	D	7
2261	C	7
2262	C	7
2263	D	7
2271	D	5
2272	C	6
2273	C	5
2274	C	6
2281	C	6
2282	C	6
2283	C	5
2284	C	6
2285	C	6
2286	C	5
2287	C	5
2288	A	5
2289	B	5
2290	A	5
2291	C	7
2292	C	6
2293	D	6
2295	D	6
2296	B	5
2297	B	5
3201	D	2
3204	C	1
3205	C	1
3211	C	9
3212	B	9
3214	B	8
3215	B	8
3216	B	9
3217	B	9
3231	A	8
3241	C	9
3242	B	8
3243	B	8
3244	B	8
3245	B	9
3246	B	9
3247	B	9
3248	B	8
3249	B	8
3250	B	8
3251	D	7
3252	D	7
3255	B	8
3256	B	8
3258	C	9
3260	B	9
3261	D	8
3262	D	8
3263	D	8
3264	D	8
3265	D	8
3266	D	8
3271	C	5
3272	C	6
3276	D	7
3277	D	7
3281	D	5
3282	D	6
3283	D	5
3284	C	6
3287	D	5
3288	D	6
3289	D	5
3290	C	6
3293	C	6
3294	C	5
3295	B	5
3296	B	5
3297	B	5
3298	A	5
5202	D	3
5280	B	2
6220	B	6
6231	B	7
6232	A	7
6233	B	7
6234	A	7
6235	A	8
6241	B	8
6242	B	8
6243	A	9
6244	B	9
6245	B	8
6247	B	9
6248	D	8
6251	B	7
6252	B	7
6253	D	7
6261	C	7
6262	D	7
6263	D	7
6265	D	8
6271	D	6
6272	D	7
7231	A	8
7232	A	8
7233	A	8
7241	C	8
7242	B	8
7243	B	8
7244	B	8
7245	B	9
7246	B	8
7247	D	8
7248	B	9
7261	C	8
7291	C	6
9201	D	3
9202	D	3
9203	C	2
9205	D	3
9207	C	2
9208	B	2
9209	C	3
9210	C	3
9212	C	3
9213	A	3
9214	A	3
9215	A	3
9216	A	4
9217	A	4
9223	B	6
9224	B	6
9226	B	7
9227	B	7
9228	B	7
9229	B	7
9230	B	9
9231	A	7
9232	A	7
9233	A	7
9235	A	7
9240	D	9
9241	B	9
9242	B	9
9243	B	9
9244	B	9
9245	C	9
9246	B	9
9248	B	8
9249	D	7
9251	C	9
9252	C	9
9253	C	9
9254	C	9
9256	D	9
9257	D	9
9258	D	9
9259	D	9
9260	D	9
9261	D	9
9262	C	9
9263	C	9
9266	D	9
9267	C	8
9268	C	8
9269	C	9
9271	C	7
9272	C	7
9273	C	7
9277	C	7
9278	D	7
9279	D	7
9281	D	5
9282	D	6
9285	C	5
9286	C	5
9287	B	5
9288	B	5
9291	C	6
9292	C	7
9294	B	6
9297	C	6
9300	C	6

Component Layout Componentside View


1
2
3
4
5
6
7
8
9
A
B
C
D
Flow Direction
PW2-P3-960520-1
3139 113 33213
CAUTION
REPAIR REPLACEMENT TO QUALIFIED SERVICE PERSONNEL
UL T1.25A
UL T6.3A
IEC T5.0A
UL T2.0A
IEC T1.6A
IEC T2.0A
L
N
5280
5202
3201
1201
1202
1210
1231
1206
1207
1208
1211
1212
9203
9207
9208
9209
9210
9212
7291
1223
1221

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

ELECTRICAL PARTS LIST - POWER BOARD

MISCELLANEOUS

21	4822 492 63051	Spring Clip 56364
22	4822 255 40128	Spring Clip T0126
24	4822 492 11084	Spring IC
31	4822 255 10301	Heat Sink Power
1201	4822 265 31015	Mains Socket
1202	4822 272 10269	Voltage Selector .../21 only
1205	4822 071 52002	Fuse 2A 250V
1206	4822 071 55002	Fuse 5A 250V
1211	4822 071 51002	Fuse 1A 250V
1212	4822 071 51002	Fuse 1A 250V

CAPACITORS

2220	5322 121 42386	100nF 5% 63V
2221	5322 121 42386	100nF 5% 63V
2222	5322 121 42386	100nF 5% 63V
2224	4822 124 11516	6800µF 20% 35V
2239	4822 122 33519	470pF 10% 50V
2240	5322 121 42386	100nF 5% 63V
2243	4822 124 42057	3300µF 20% 25V
2245	4822 124 40433	47µF 20% 25V
2246	4822 122 33197	1nF 10% 50V
2247	4822 122 33197	1nF 10% 50V
2248	4822 124 22263	220µF 20% 25V
2249	4822 126 12882	100nF +80/-20% 50V
2250	4822 124 41584	100µF 20% 10V
2251	4822 126 12785	47nF 50V
2252	4822 122 33197	1nF 10% 50V
2253	4822 122 33197	1nF 10% 50V
2261	4822 126 12882	100nF +80/-20% 50V
2262	4822 124 40255	100µF 20% 63V
2263	4822 124 41596	22µF 20% 50V
2271	4822 122 10575	8,2nF 20% 16V
2272	4822 122 10575	8,2nF 20% 16V
2273	4822 124 40433	47µF 20% 25V
2274	4822 124 40433	47µF 20% 25V
2281	4822 122 10577	3,3nF 10% 16V
2282	4822 122 10577	3,3nF 10% 16V
2283	4822 124 22263	220µF 20% 25V
2284	4822 124 22263	220µF 20% 25V
2285	5322 121 42386	100nF 5% 63V
2286	5322 121 42386	100nF 5% 63V
2287	4822 124 80148	2200µF 20% 16V
2288	4822 124 80148	2200µF 20% 16V
2289	4822 126 12882	100nF +80/-20% 50V
2290	4822 126 12882	100nF +80/-20% 50V
2291	4822 124 40242	1µF 20% 63V
2292	4822 122 33197	1nF 10% 50V
2293	4822 124 42392	470µF 20% 50V
2295	4822 122 33519	470pF 10% 50V

RESISTORS

3204	4822 052 10108	1E 5% 0,33W
3211	4822 116 83872	220E 5% 0,5W
3212	4822 116 52217	270E 5% 0,5W
3214	4822 116 52256	2k2 5% 0,5W
3215	4822 116 52256	2k2 5% 0,5W
3216	4822 116 52256	2k2 5% 0,5W
3217	4822 116 52256	2k2 5% 0,5W
3242	4822 050 11002	1k 1% 0,4W
3243	4822 050 11002	1k 1% 0,4W
3244	4822 050 11002	1k 1% 0,4W
3245	4822 116 52283	4k7 5% 0,5W
3246	4822 116 52283	4k7 5% 0,5W
3247	4822 116 52283	4k7 5% 0,5W
3248	4822 050 11002	1k 1% 0,4W
3249	4822 116 52284	47K 5% 0,5W
3250	4822 116 83882	39K 5% 0,5W
3251	4822 116 52283	4k7 5% 0,5W
3252	4822 116 52283	4k7 5% 0,5W
3255	4822 116 52263	2k7 5% 0,5W
3256	4822 116 52283	4k7 5% 0,5W
3258	4822 116 52207	1k2 5% 0,5W
3260	4822 116 83882	39K 5% 0,5W
3261	4822 116 52276	3k9 5% 0,5W
3262	4822 052 10479	47E 5% 0,33W
3263	4822 116 83864	10K 5% 0,5W
3264	4822 116 52257	22K 5% 0,5W
3265	4822 116 52175	100E 5% 0,5W
3266	4822 116 52175	100E 5% 0,5W
3271	4822 116 52284	47K 5% 0,5W
3272	4822 116 52284	47K 5% 0,5W
3276	4822 116 52284	47K 5% 0,5W
3277	4822 116 52283	4k7 5% 0,5W
3281	4822 116 52256	2k2 5% 0,5W
3282	4822 116 52256	2k2 5% 0,5W
3283	4822 116 52243	1k5 5% 0,5W
3284	4822 116 52243	1k5 5% 0,5W
3287	4822 116 52263	2k7 5% 0,5W
3288	4822 116 52263	2k7 5% 0,5W
3289	4822 116 52222	390E 5% 0,5W
3290	4822 116 52222	390E 5% 0,5W
3293	4822 052 10228	2E2 5% 0,33W
3294	4822 052 10228	2E2 5% 0,33W
3295	4822 116 52256	2k2 5% 0,5W
3296	4822 116 52256	2k2 5% 0,5W
3297	4822 117 12148	1E5 5% 0,33W
3298	4822 117 12148	1E5 5% 0,33W

COILS

5202	4822 157 71285	COIL 400µH

DIODES

6220	4822 130 82078	D5SBA20
6241	5322 130 80686	1N5392
6242	5322 130 80686	1N5392
6243	4822 130 30621	1N4148
6244	4822 130 34173	BZX79-C5V6
6245	4822 130 34173	BZX79-C5V6
6247	4822 130 30621	1N4148
6248	5322 130 30684	1N4002GP
6251	4822 130 30621	1N4148
6252	4822 130 30621	1N4148
6253	4822 130 34382	BZX79-C8V2
6261	5322 130 30684	1N4002GP
6262	4822 130 31024	BZX79-C18
6263	4822 130 34281	BZX79-C15
6265	4822 130 34174	BZX79-C4V7
6271	4822 130 30621	1N4148
6272	4822 130 34174	BZX79-C4V7

TRANSISTORS & INTEGRATED CIRCUITS

7242	4822 130 40995	BD438
7243	4822 130 40937	BC548B
7244	4822 130 44197	BC558B
7245	4822 130 44197	BC558B
7246	4822 130 40937	BC548B
7247	4822 209 80817	L7805CV
7248	4822 130 40937	BC548B
7261	4822 130 40917	BD238
7291	4822 209 90411	AN7164

NOTE: Only the parts mentioned in this list are normal service spare parts.

AF2 BOARD

BRIEF INTRODUCTION OF PCBAS AF-2:

The AF2 board consists of the following :

a. SOFAC IC which includes functions such as source selection, loudness control, bass control, treble control, front/rear volume control and muting function. All function are controllable via I^2C data from the master microprocessor.

The SOFAC IC caters for 4 input sources, namely tuner, tape, CD and AUX.

b. Karaoke Mic. Mixing. (not applicable for MC150/MC170)
NK : Non Karaoke
SK : Simple Karaoke which caters for mic. mixing with additional mic. amp. board.
FK : Full Karaoke with vocal fader and echo effect with additional Karaoke board.

c. Incredible Sound using IC LM324DT quad Op-Amp to create phase shifting and spatial effect.

d. Headphone Amplifier using Op-Amp . NJM4556M.

e. CD standby control circuit which switches on the CD servo supply in CD mode only.

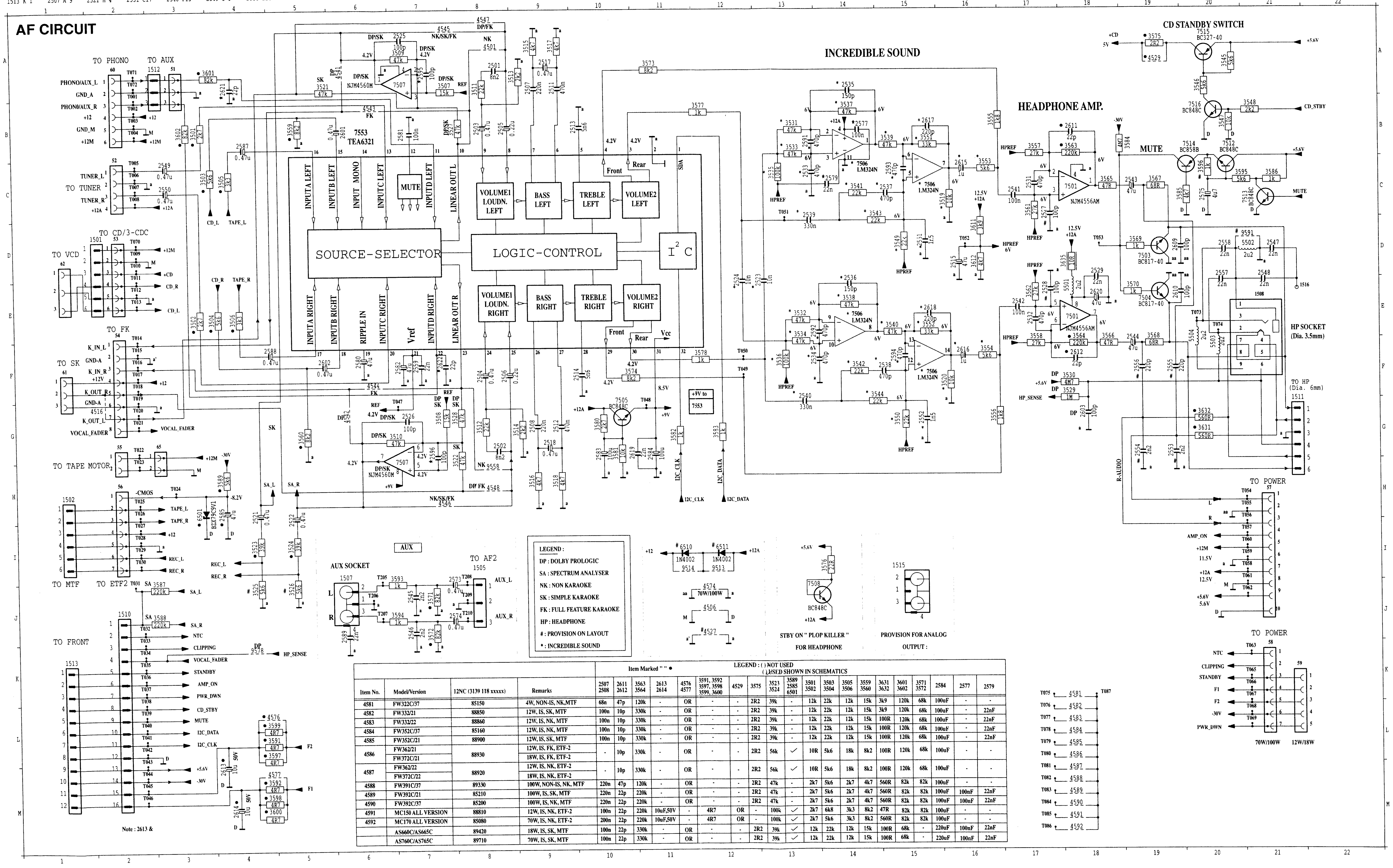
f. Headphone Sensing circuit to mute speaker for Dolby Prologic application.

f. Attenuation network is provided at the output of the AF2 board for interfacing with power board of different output power.

NOTES

1501	D 2
1502	H 1
1505	I 8
1507	I 6
1508	E21
1510	J 2
1511	G21
1512	A 3
1513	K 1
1515	I15
1516	E21
2501	A 8
2502	G 8
2503	B 8
2504	F 8
2505	B 8
2506	F 8
2507	A 9
2508	G 9
2511	A 9
2512	G 9
2513	B10
2514	F10
2515	D16
2517	A 9
2518	G 9
2521	H 4
2522	H 5
2523	E13
2524	E12
2525	A 7
2526	G 7
2527	C17
2528	E17
2529	D18
2531	C17
2532	E17
2533	C13
2534	F13
2535	A14
2536	E14
2537	C15
2538	F15
2539	C13
2540	F13
2541	C17
2542	E17
2543	C19
2544	F19
2545	J 7
2546	J 7
2547	D21
2548	D21
2549	C 3
2550	C 3
2551	D15
2552	G15
2553	G19
2554	G19
2555	F19
2556	F19
2557	D20
2558	D20
2559	F 7
2573	I 7
2574	J 7
2575	C20
2577	B14
2579	C14
2580	F 6
2581	B 7
2582	F 7
2583	G10
2584	G11
2585	H 4
2587	B 4
2588	F 4
2589	J 6
2591	B13
2592	E13
2593	C15
2594	F15
2595	A 7
2596	G 7
2601	B 6
2602	F 5
2603	G18
2609	D19
2610	E19
2611	B18
2612	F18
2613	M 4
2614	M 4
2615	C16
2616	F16
2617	B15
2618	E15
2619	G10
2620	E18
2621	A 4
2622	F 7
3501	B 3
3502	E 3
3503	C 3
3504	E 4
3505	C 4
3506	E 4
3507	A 7
3508	G 7
3509	A 7
3510	G 7
3511	A 8
3512	G 8
3513	A 9
3514	G 9
3515	A 9
3516	H 9
3517	A 9
3518	H 9
3519	C16
3520	F16
3521	A 5
3522	G 8
3523	I 4
3524	I 5
3525	J 4
3526	J 5
3527	B 8
3528	G 8
3529	F18
3530	F18
3531	B13
3532	E13
3533	B13
3534	E13
3535	C13
3536	F13
3537	B14
3538	E14
3539	B15
3540	E15
3541	C14
3542	F14
3543	C14
3544	F14
3545	A20
3546	A20
3547	B20
3548	B21
3549	D15
3550	G15
3551	B15
3552	E15
3553	C16
3554	F16
3555	B16
3556	G16
3557	B17
3558	F17
3559	B 5
3560	G 5
3561	C17
3562	E17
3563	B18
3564	F18
3565	C18
3566	F18
3567	C19
3568	F19
3569	D19
3570	E19
3571	J 7
3572	J 7
3573	A11
3574	F10
3575	A19
3576	I14
3577	B12
3578	F12
3580	G10
3581	G10
3582	G11
3583	G12
3584	B19
3585	C20
3586	C21
3587	J 3
3588	J 3
3589	H 4
3591	L 4
3592	M 4
3593	I 7
3594	J 7
3595	C21
3596	C20
3597	L 4
3598	M 4
3599	L 4
3600	M 4
3601	A 4
3602	B 3
3611	D16
3612	D16
3631	G20
3632	G20
3635	D18
4501	A 8
4506	J12
4516	G 2
4527	J12
4529	A19
4541	A 6
4542	G 6
4543	B 6
4544	F 6
4545	A 7
4546	H 7
4547	A 8
4548	H 8
4574	J12
4576	L 4
4577	M 4
4581	K17
4582	L17
4583	L17
4584	L17
4585	L17
4586	L17
4587	M17
4588	M17
4589	M17
4590	M17
4591	M17
4592	M17
51	A 3
52	B 2
53	D 2
54	E 2
55	G 2
5501	E18
5502	D21
5503	F20
5504	E20
56	H 2
57	H21
58	K21
59	K21
60	A 2
61	F 1
62	D 1
65	G 3
6501	H 3
6510	I11
6511	I12
7501	C18
7501	E18
7503	D19
7504	E19
7505	G10
7506	C14
7506	C15
7506	E14
7506	F15
7507	A 7
7507	H 7
7508	J14
7512	B20
7513	C21
7514	B20
7515	A20
7516	B20
7553	B 6
9513	I12
9514	I11
9558	H 8
9578	K 4
9591	D21

AF CIRCUIT



LEGEND :

DP : DOLBY PROLOGIC

SA : SPECTRUM ANALYSER

NK : NON KARAOKE

SK : SIMPLE KARAOKE

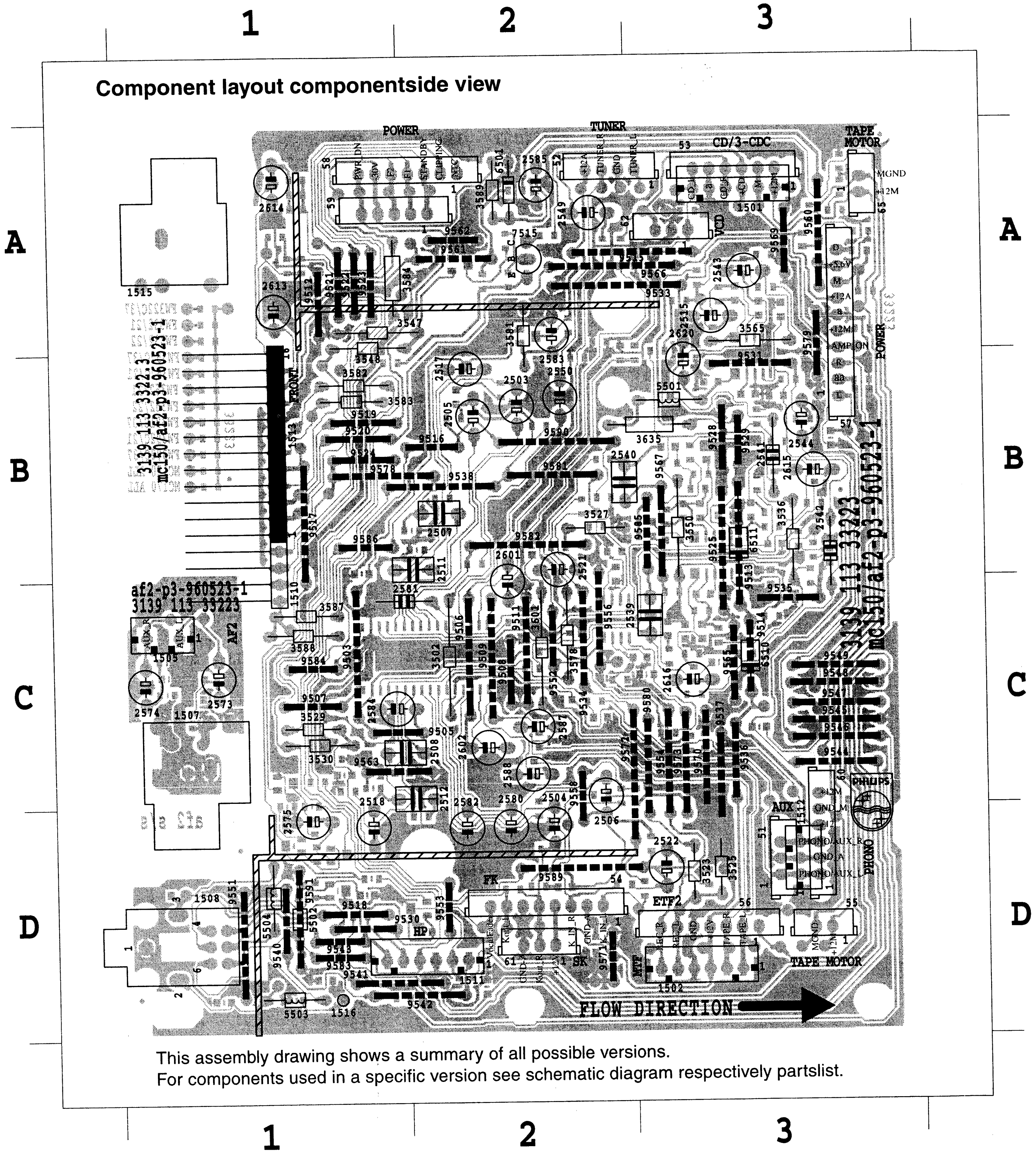
FK : FULL FEATURE KARAOKE

HP : HEADPHONE

: PROVISION ON LAYOUT

* : INCREDIBLE SOUND

				Item Marked " " ●					LEGEND : ( ) NOT USED (✓)USED SHOWN IN SCHEMATICS														
Item No.	Model/Version	12NC (3139 118 xxxxx)	Remarks	2507 2508	2611 2612	3563 3564	2613 2614	4576 4577	3591, 3592 3597, 3598 3599, 3600	4529	3575	3523 3524	3589 2585 6501	3501 3502	3503 3504	3505 3506	3559 3560	3631 3632	3601 3602	3571 3572	2584	2577	2579
4581	FW322C/37	85150	4W, NON-IS, NK,MTF	68n	47p	120k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	3k9	120k	68k	100uF	-	-
4582	FW332/21	88850	12W, IS, SK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	3k9	120k	68k	100uF	-	22nF
4583	FW332/22	88860	12W, IS, NK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k	100uF	-	22nF
4584	FW352C/37	85160	12W, IS, NK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k	100uF	-	22nF
4585	FW352C/21	88900	12W, IS, SK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k	100uF	-	22nF
4586	FW362/21	88930	12W, IS, FK, ETF-2	-	10p	330k	-	OR	-	-	2R2	56k	✓	10R	5k6	18k	8k2	100R	120k	68k	100uF	-	-
	FW372C/21		18W, IS, FK, ETF-2																				
4587	FW362/22	88920	12W, IS, NK, ETF-2	-	10p	330k	-	OR	-	-	2R2	56k	✓	10R	5k6	18k	8k2	100R	120k	68k	100uF	-	-
	FW372C/22		18W, IS, NK, ETF-2																				
4588	FW391C/37	89330	100W, NON-IS, NK, MTF	220n	47p	120k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k	100uF	-	-
4589	FW392C/21	85210	100W, IS, SK, MTF	220n	22p	220k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k	100uF	100nF	22nF
4590	FW392C/37	85200	100W, IS, NK, MTF	220n	22p	220k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k	100uF	100nF	22nF
4591	MC150 ALL VERSION	88810	12W, IS, NK, ETF-2	100n	22p	220k	10uF,50V	-	4R7	OR	-	100k	✓	2k7	6k8	3k3	8k2	47R	82k	82k	100uF	-	-
4592	MC170 ALL VERSION	85080	70W, IS, NK, ETF-2	200n	22p	220k	10uF,50V	-	4R7	OR	-	100k	✓	2k7	5k6	3k3	8k2	560R	82k	82k	100uF	-	-
	AS660C/AS665C	89420	18W, IS, SK, MTF	100n	22p	330k	-	OR	-	-	2R2	39k	✓	12k	22k	12k	15k	100R	68k	-	220uF	100nF	22nF
	AS760C/AS765C	89710	70W, IS, SK, MTF	100n	22p	330k	-	OR	-	-	2R2	39k	✓	12k	22k	12k	15k	100R	68k	-	220uF	100nF	22nF



Component layout componentside view

1
2
3
A
B
C
D
POWER
TUNER
CD/3-CDC
TAPE MOTOR
MGND
+12M
FRONT
POWER
AUX
PHONO
PHILIPS
HP
ETF2
TAPE MOTOR
FLOW DIRECTION
3139 113 3322.3
mc150/af2-p3-960523-1
af2-p3-960523-1
3139 113 33223
AF2
3139 113 33223
mc150/af2-p3-960523-1
1515
1505
1507
1508
2574
2573
2614
2613
1501
1502
1510
1511
1512
1516
5503

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

51	D	3
52	A	2
53	A	3
54	D	2
55	D	3
56	D	3
57	A	3
58	A	2
59	A	1
60	D	3
61	D	2
62	A	3
65	A	3
1501	A	3
1502	D	3
1505	C	1
1507	C	1
1508	D	1
1510	B	1
1511	D	2
1512	D	3
1513	B	1
1515	A	1
1516	D	1
2503	B	2
2504	D	2
2505	B	2
2506	C	2
2507	B	2
2508	C	1
2511	B	2
2512	C	2
2515	A	3
2517	B	2
2518	D	1
2521	B	2
2522	D	3
2539	C	3
2540	B	2
2541	B	3
2542	B	3
2543	A	3
2544	B	3
2549	A	2
2550	B	2
2573	C	1
2574	C	1
2575	D	1
2580	D	2
2581	C	1
2582	D	2
2583	A	2
2584	C	1
2585	A	2
2587	C	2
2588	C	2
2601	C	2
2602	C	2
2613	A	1
2614	A	1
2615	B	3
2616	C	3
2620	B	3
3502	C	2
3523	D	3
3525	D	3
3527	B	2
3529	C	1
3530	C	1
3536	B	3
3547	A	1
3548	A	1
3550	B	3
3565	A	3
3578	C	2
3581	A	2
3582	B	1
3583	B	1
3584	A	1
3587	C	1
3588	C	1
3589	A	2
3601	C	2
3635	B	3
5501	B	3
5502	D	1
5503	D	1
5504	D	1
6501	A	2
6510	C	3
6511	B	3
7515	A	2
9503	C	1
9505	C	1
9506	C	2
9507	C	1
9508	C	2
9509	C	2
9511	C	2
9512	A	1
9513	B	3
9514	C	3
9515	A	3
9516	B	2
9517	B	1
9518	D	1
9519	B	1
9520	B	1
9521	A	1
9522	A	1
9523	A	1
9524	B	1
9525	B	3
9528	B	3
9529	B	3
9530	D	1
9531	B	3
9533	A	2
9534	C	2
9535	C	3
9536	C	3
9537	C	3
9538	B	2
9540	D	1
9541	D	1
9542	D	2
9543	D	1
9544	C	3
9545	C	3
9546	C	3
9547	C	3
9548	C	3
9549	C	3
9551	D	1
9552	C	2
9553	D	2
9554	C	3
9556	C	2
9558	C	2
9560	A	3
9561	A	2
9562	A	2
9563	C	1
9565	C	3
9566	A	2
9567	B	3
9569	A	3
9570	C	3
9571	D	2
9572	C	2
9573	C	3
9578	B	1
9579	A	3
9580	C	3
9581	B	2
9582	B	2
9583	D	1
9584	C	1
9585	B	3
9586	B	1
9589	D	2
9590	B	2
9591	D	1

Voltage Assignments:

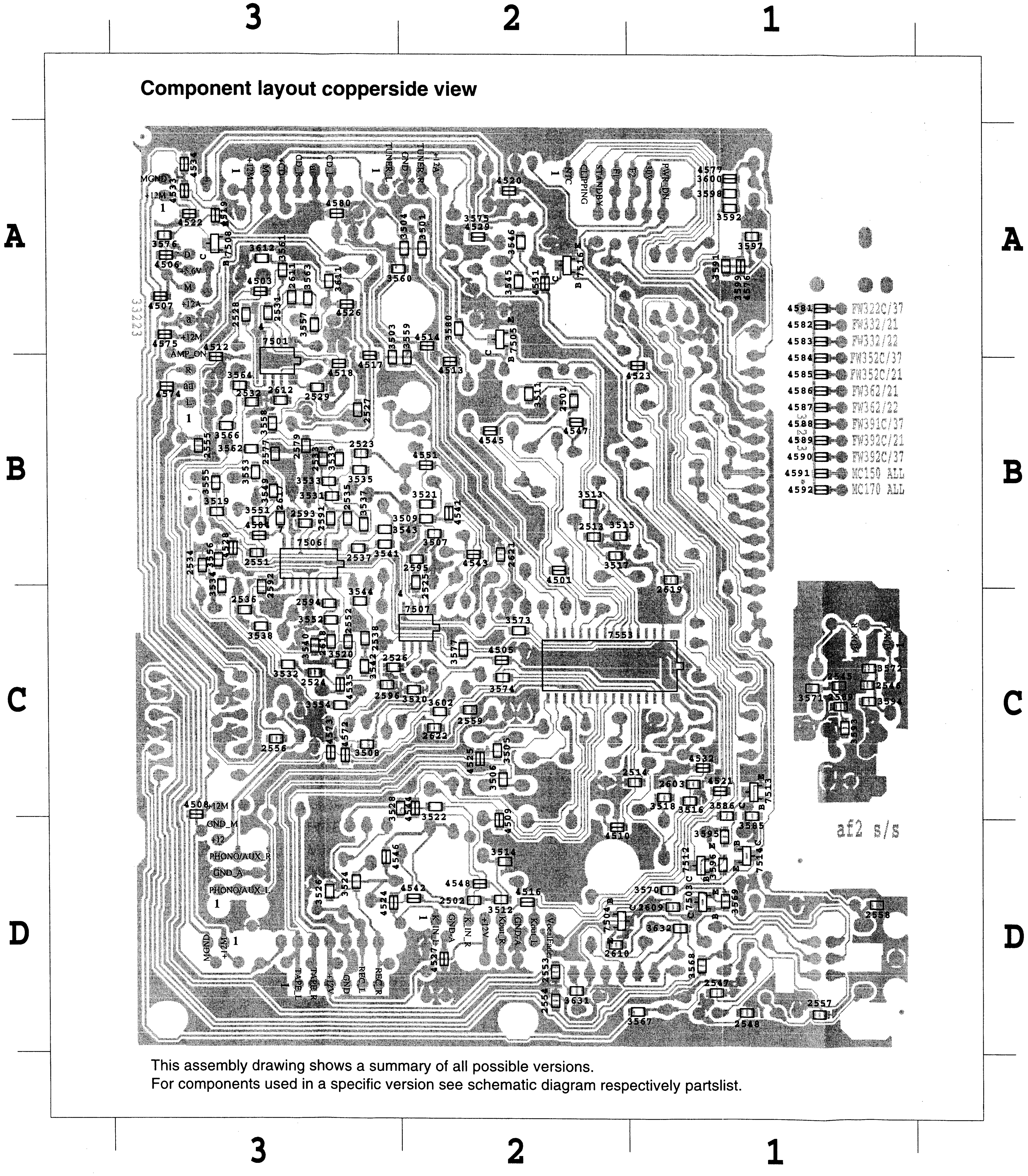
+CD	5V
CD_STBY	0V (CD stop) 2.3V (CD play)
REF	4.2V
HPREF	+6V
HP_SENSE	4.5V
+12, +12A, +12M	12V

CONNECTOR 1510
Measured in CD Play mode, unless otherwise stated.

1	SA	N.C.
2	NTC	5V
3	SoClipping	5V
4	VocalFader	4.5V
5	Standby	0V (Standby) 5V (on)
6	AmOn	0V (standby) 3.8V (on)
7	PowerDown	8.15
8	CDstandby	0V (CD stop) 2.3V (CD plsy)
9	MUTE	0V (CD stop) 0.75V (CD play, Tuner) 0.75V (Tape, AUX)
10	I2CDATA	5V
11	I2CCIK	5V
12	DGND	0V
13	+D	5.6V
14	-Vkk	-30V
15	F2	6V AC
16	F1	6V AC

SIGNAL MAPPING

+12	B2,J13	I2C_CLK	H11,L3
+12A	G10,J13,J19,K14	I2C_DATA	H12,L3
+12M	B2,H4,I19	K_IN_L	F2
+12V	F2	K_IN_R	F2
+5.6	J14	K_OUT_L	G2
+5.6V	A21,B21,J19,M3	K_OUT_R	F2
+9V	G11,H8	L	H19
-30V	H4,M3,L19	MUTE	C21,L3
AMP_ON	I19,K3	NTC	J3,L19
AUX_L	J8	PHONO/AUX_L	A2
AUX_R	J8	PHOHO/AUX_R	B2
CD_L	D4	PWR_DWN	K3,L19
CD_R	E4	R	I19
CD_STBY	B21,L3	R_AUDIO	H18
CLIPPING	K3,L19	REC_L	I4
F1	M5,L19	REC_R	I4
F2	L5,L19	REF	B8,G6,G8
GND_A	A2	SA_L	H4
GND_M	B2	SA_R	H5,J3
HP_SENSE	G17,K5	STANDBY	K3,L19
HPREF	B17,C13,D17,F13,F17,H15	TAPE_L	D4
VOCAL RADER	G2,K3	TAPE_R	E4



Component layout copperside view

3
2
1
A
B
C
D
MGND
+12M
AMP_ON
TUNER_L
GND
TUNER_R
STANDBY
CLIPPING
NTC
PWRDN
+12M
GND_M
+12
PHONO/AUX_R
GND_A
PHONO/AUX_L
MGND
TAPE_L
GND
RECL
RECR
GNDA
KIN_L
KIN_R
Kout_R
Kout_L
4581 FW322C/37
4582 FW332/21
4583 FW332/22
4584 FW352C/37
4585 FW352C/21
4586 FW362/21
4587 FW362/22
4588 FW391C/37
4589 FW392C/21
4590 FW392C/37
4591 MC150 ALL
4592 MC170 ALL
7501
7505
7506
7507
7553
af2 s/s

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

2501	B	2
2502	D	2
2513	B	2
2514	C	1
2523	B	3
2524	C	3
2525	B	2
2526	C	3
2527	B	3
2528	A	3
2529	B	3
2531	A	3
2532	B	3
2533	B	3
2534	B	3
2535	B	3
2536	C	3
2537	B	3
2538	C	3
2545	C	1
2546	C	1
2547	D	1
2548	D	1
2551	B	3
2552	C	3
2553	D	2
2554	D	2
2555	B	3
2556	C	3
2557	D	1
2558	D	1
2559	C	2
2577	B	3
2579	B	3
2589	C	1
2591	B	3
2592	C	3
2593	B	3
2594	C	3
2595	B	2
2596	C	3
2603	C	1
2609	D	1
2610	D	2
2611	A	3
2612	B	3
2617	B	3
2618	C	3
2619	B	1
2621	B	2
2622	C	2
3501	A	2
3503	B	3
3504	A	2
3505	C	2
3506	C	2
3507	B	2
3508	C	3
3509	B	2
3510	C	2
3511	B	2
3512	D	2
3513	B	2
3514	D	2
3515	B	2
3516	C	1
3517	B	2
3518	C	1
3519	B	3
3520	C	3
3521	B	2
3522	C	2
3524	D	3
3526	D	3
3528	C	3
3531	B	3
3532	C	3
3533	B	3
3534	C	3
3535	B	3
3537	B	3
3538	C	3
3539	B	3
3540	C	3
3541	B	3
3542	C	3
3543	B	3
3544	C	3
3545	A	2
3546	A	2
3549	B	3
3551	B	3
3552	C	3
3553	B	3
3554	C	3
3555	B	3
3556	B	3
3557	A	3
3558	B	3
3559	B	2
3560	A	3
3561	A	3
3562	B	3
3563	A	3
3564	B	3
3566	B	3
3567	D	1
3568	D	1
3569	D	1
3570	D	1
3571	C	1
3572	C	1
3573	C	2
3574	C	2
3575	A	2
3576	A	3
3577	C	2
3580	A	2
3585	C	1
3586	C	1
3591	A	1
3592	A	1
3593	C	1
3594	C	1
3595	D	1
3596	D	1
3597	A	1
3598	A	1
3599	A	1
3600	A	1
3602	C	2
3611	A	3
3612	A	3
3631	D	2
3632	D	1
4501	B	2
4503	A	3
4504	B	3
4505	C	2
4506	A	3
4507	A	3
4508	C	3
4509	D	2
4510	D	2
4512	B	3
4513	B	2
4514	A	2
4516	D	2
4517	B	3
4518	B	3
4519	A	3
4520	A	2
4521	C	1
4522	A	3
4523	B	1
4524	D	3
4525	C	2
4526	A	3
4527	D	2
4528	B	3
4529	A	2
4531	A	2
4532	C	1
4533	A	3
4534	A	3
4535	C	3
4541	B	2
4542	D	2
4543	B	2
4544	C	2
4545	B	2
4546	D	3
4547	B	2
4548	D	2
4551	B	2
4572	C	3
4573	C	3
4574	B	3
4575	A	3
4576	A	1
4577	A	1
4580	A	3
4581	A	1
4582	A	1
4583	A	1
4584	B	1
4585	B	1
4586	B	1
4587	B	1
4588	B	1
4589	B	1
4590	B	1
4591	B	1
4592	B	1
7501	B	3
7503	D	1
7504	D	2
7505	A	2
7506	B	3
7507	C	2
7508	A	3
7512	D	1
7513	C	1
7514	D	1
7516	A	2
7553	C	2

ELECTRICAL PARTSLIST AF BOARD

MISCELLANEOUS

1508	4822 267 40898	Headphone socket

CAPACITORS

2501	4822 122 33336	8.2nF10%X7R 50V
2502	4822 122 33336	8.2nF10%X7R 50V
2503	4822 124 41407	0.47µF 20% 63V
2504	4822 124 41407	0.47µF 20% 63V
2505	4822 124 40746	0.22µF20% 63V
2506	4822 124 40746	0.22µF20% 63V
2507	5322 121 42386	100nF 5% 63V
2508	5322 121 42386	100nF 5% 63V
2511	4822 121 51252	470nF 5% 63V
2512	4822 121 51252	470nF 5% 63V
2513	4822 122 32646	5.6nF10%X7R 50V
2514	4822 122 32646	5.6nF10%X7R 50V
2515	4822 124 40433	47µF20% 25V
2517	4822 124 41407	0.47µF 20% 63V
2518	4822 124 41407	0.47µF 20% 63V
2521	4822 124 41407	0.47µF 20% 63V
2522	4822 124 41407	0.47µF 20% 63V
2523	4822 122 33177	10nF 20% X7R 50V
2524	4822 122 33177	10nF 20% X7R 50V
2525	5322 122 32531	100pF 5%NP0 50V
2526	5322 122 32531	100pF 5%NP0 50V
2529	5322 122 32654	22nF10%X7R 63V
2531	5322 122 32268	470pF 10% 50V
2532	5322 122 32268	470pF 10% 50V
2533	5322 122 32268	470pF 10% 50V
2534	5322 122 34099	470pF10%X7R 63V
2535	5322 122 33538	150pF 2%NP0 63V
2536	5322 122 33538	150pF 2%NP0 63V
2537	5322 122 32268	470pF 10% 50V
2538	5322 122 32268	470pF 10% 50V
2539	5322 121 42661	330nF 5% 63V
2540	5322 121 42661	330nF 5% 63V
2541	4822 126 12882	100nF+80-20% 50V
2542	4822 126 12882	100nF+80-20% 50V
2543	4822 124 41751	47µF 20% 50V
2544	4822 124 41751	47µF 20% 50V
2547	5322 122 32654	22nF10%X7R 63V
2548	5322 122 32654	22nF10%X7R 63V
2549	4822 124 41407	0.47µF 20% 63V
2550	4822 124 41407	0.47µF 20% 63V
2551	5322 122 31865	1.5nF10%X7R 63V
2552	5322 122 31865	1.5nF10%X7R 63V
2557	5322 122 32654	22nF10%X7R 63V
2558	5322 122 32654	22nF10%X7R 63V
2559	5322 122 32654	22nF10%X7R 63V
2575	4822 124 40246	4.7µF20% 63V
2577	4822 126 13838	100nF Y5V 0805 50V P80M20
2579	5322 122 32654	22nF10%X7R 63V
2580	4822 124 41751	47µF 20% 50V
2581	4822 126 12882	100nF+80-20% 50V
2582	4822 124 41751	47µF 20% 50V
2583	4822 124 81029	100µF20% 25V
2584	4822 124 22263	220µF20% 25V
2587	4822 124 41407	0.47µF 20% 63V
2588	4822 124 41407	0.47µF 20% 63V

CAPACITORS

2591	5322 122 32268	470pF 10% 50V
2592	5322 122 32268	470pF 10% 50V
2593	5322 122 32268	470pF 10% 50V
2594	5322 122 32268	470pF 10% 50V
2595	5322 122 32268	470pF 10% 50V
2596	5322 122 32268	470pF 10% 50V
2601	4822 124 41407	0.47µF 20% 63V
2602	4822 124 41407	0.47µF 20% 63V
2609	5322 122 32531	100pF 5%NP0 50V
2610	5322 122 32531	100pF 5%NP0 50V
2611	5322 122 32658	22pF 5% 50V
2612	5322 122 32658	22pF 5% 50V
2615	4822 124 40242	1µF20% 63V
2616	4822 124 40242	1µF20% 63V
2617	4822 122 33575	220pF 5%NPO 50V
2618	4822 122 33575	220pF 5%NPO 50V
2619	5322 122 32654	22nF10%X7R 63V
2620	4822 124 40433	47µF20% 25V

RESISTORS

3501	4822 117 11383	12k	1%	0.1W
3502	4822 116 52238	12k	5%	0.5W
3503	4822 051 20223	22k	5%	0.1W
3504	4822 051 20223	22k	5%	0.1W
3505	4822 117 11383	12k	1%	0.1W
3506	4822 117 11383	12k	1%	0.1W
3507	4822 051 20153	15k	5%	0.1W
3508	4822 051 20153	15k	5%	0.1W
3509	4822 051 20473	47k	5%	0.1W
3510	4822 051 20473	47k	5%	0.1W
3511	4822 051 20223	22k	5%	0.1W
3512	4822 051 20223	22k	5%	0.1W
3513	4822 117 11449	2k2	1%	0.1W
3514	4822 117 11449	2k2	1%	0.1W
3515	4822 051 20472	4k7	5%	0.1W
3516	4822 051 20472	4k7	5%	0.1W
3517	4822 051 20472	4k7	5%	0.1W
3518	4822 051 20472	4k7	5%	0.1W
3519	4822 117 10833	10k	1%	0.1W
3520	4822 117 10833	10k	1%	0.1W
3521	4822 051 20473	47k	5%	0.1W
3522	4822 051 20473	47k	5%	0.1W
3523	4822 116 83882	39k	5%	0.5W
3524	4822 051 20393	39k	5%	0.1W
3527	4822 116 52284	47k	5%	0.5W
3528	4822 051 20473	47k	5%	0.1W
3531	4822 051 20473	47k	5%	0.1W
3532	4822 051 20473	47k	5%	0.1W
3533	4822 051 20473	47k	5%	0.1W
3534	4822 051 20473	47k	5%	0.1W
3535	4822 051 20104	100k	5%	0.1W
3536	4822 116 52234	100k	5%	0.5W
3537	4822 051 20473	47k	5%	0.1W
3538	4822 051 20473	47k	5%	0.1W
3539	4822 051 20473	47k	5%	0.1W
3540	4822 051 20473	47k	5%	0.1W
3541	4822 051 20223	22k	5%	0.1W
3542	4822 051 20223	22k	5%	0.1W

ELECTRICAL PARTSLIST AF BOARD

RESISTORS

3543	4822 051 20223	22k	5%	0.1W
3544	4822 051 20223	22k	5%	0.1W
3545	4822 051 20562	5k6	5%	0.1W
3546	4822 051 20562	5k6	5%	0.1W
3547	4822 116 83864	10k	5%	0.5W
3548	4822 116 52256	2k2	5%	0.5W
3549	4822 051 20223	22k	5%	0.1W
3550	4822 116 52257	22k	5%	0.5W
3551	4822 051 20333	33k	5%	0.1W
3552	4822 051 20333	33k	5%	0.1W
3553	4822 051 20562	5k6	5%	0.1W
3554	4822 051 20562	5k6	5%	0.1W
3555	4822 051 20182	1k80	5%	0.1W
3556	4822 051 20182	1k80	5%	0.1W
3557	4822 051 20273	27k	5%	0.1W
3558	4822 051 20273	27k	5%	0.1W
3559	4822 051 20153	15k	5%	0.1W
3560	4822 051 20153	15k	5%	0.1W
3561	4822 051 20273	27k	5%	0.1W
3562	4822 051 20273	27k	5%	0.1W
3563	4822 051 20334	330k	5%	0.1W
3564	4822 051 20334	330k	5%	0.1W
3565	4822 116 52195	47R	5%	0.5W
3566	4822 051 20479	47R	5%	0.1W
3567	4822 051 20689	68R	5%	0.1W
3568	4822 051 20689	68R	5%	0.1W
3569	4822 051 10102	1k	2%	0.25W
3570	4822 051 10102	1k	2%	0.25W
3573	4822 051 20822	8k2	5%	0.1W
3574	4822 051 20822	8k2	5%	0.1W
3575	4822 051 20228	2R2	5%	0.1W
3576	4822 051 20229	22R	5%	0.1W
3577	4822 051 10102	1k	2%	0.25W
3578	4822 050 11002	1k	1%	0.4W
3580	4822 051 20272	2k7	5%	0.1W
3581	4822 116 83864	10k	5%	0.5W
3582	4822 050 11002	1k	1%	0.4W
3583	4822 050 11002	1k	1%	0.4W
3584	4822 050 24705	4M7	1%	0.6W
3585	4822 051 20472	4k7	5%	0.1W
3586	4822 051 10102	1k	2%	0.25W
3589	4822 116 52289	5k6	5%	0.5W
3595	4822 051 20562	5k6	5%	0.1W
3601	4822 116 52297	68k	5%	0.5W
3602	4822 051 20683	68k	5%	0.1W
3611	4822 051 20392	3k90	5%	0.1W
3612	4822 051 20472	4k7	5%	0.1W
3631	4822 051 20101	100R	5%	0.1W
3632	4822 051 20101	100R	5%	0.1W
3635	4822 052 10109	10R	5%	0.33W

CHIP JUMPER

4503	4822 051 20008	0R Jumper
4504	4822 051 20008	0R Jumper
4505	4822 051 20008	0R Jumper
4506	4822 051 20008	0R Jumper
4507	4822 051 20008	0R Jumper
4508	4822 051 20008	0R Jumper

CHIP JUMPER

4509	4822 051 20008	0R Jumper
4510	4822 051 20008	0R Jumper
4511	4822 051 20008	0R Jumper
4512	4822 051 20008	0R Jumper
4513	4822 051 20008	0R Jumper
4514	4822 051 20008	0R Jumper
4516	4822 051 20008	0R Jumper
4517	4822 051 20008	0R Jumper
4518	4822 051 20008	0R Jumper
4519	4822 051 20008	0R Jumper
4520	4822 051 20008	0R Jumper
4521	4822 051 20008	0R Jumper
4522	4822 051 20008	0R Jumper
4523	4822 051 20008	0R Jumper
4524	4822 051 20008	0R Jumper
4525	4822 051 20008	0R Jumper
4526	4822 051 20008	0R Jumper
4528	4822 051 20008	0R Jumper
4531	4822 051 20008	0R Jumper
4532	4822 051 20008	0R Jumper
4533	4822 051 20008	0R Jumper
4534	4822 051 20008	0R Jumper
4535	4822 051 20008	0R Jumper
4545	4822 051 20008	0R Jumper
4546	4822 051 20008	0R Jumper
4551	4822 051 20008	0R Jumper
4569	4822 051 20008	0R Jumper
4572	4822 051 20008	0R Jumper
4573	4822 051 20008	0R Jumper
4574	4822 051 20008	0R Jumper
4575	4822 051 20008	0R Jumper
4576	4822 051 20008	0R Jumper
4577	4822 051 20008	0R Jumper
4580	4822 051 20008	0R Jumper

COILS & DIODES

5501	4822 156 21721	COIL 2.2µH
5502	4822 156 21721	COIL 2.2µH
5503	4822 156 21721	COIL 2.2µH
5504	4822 156 21721	COIL 2.2µH
6501	4822 130 30862	BZX79-C9V1

INTEGRATED CIRCUITS

7501	4822 209 31378	NJM4556AM
7506	4822 209 63709	LM324D
7507	4822 209 83357	NJM4560M
7553	4822 209 33652	TRA6321T/V1

TRANSISTORS

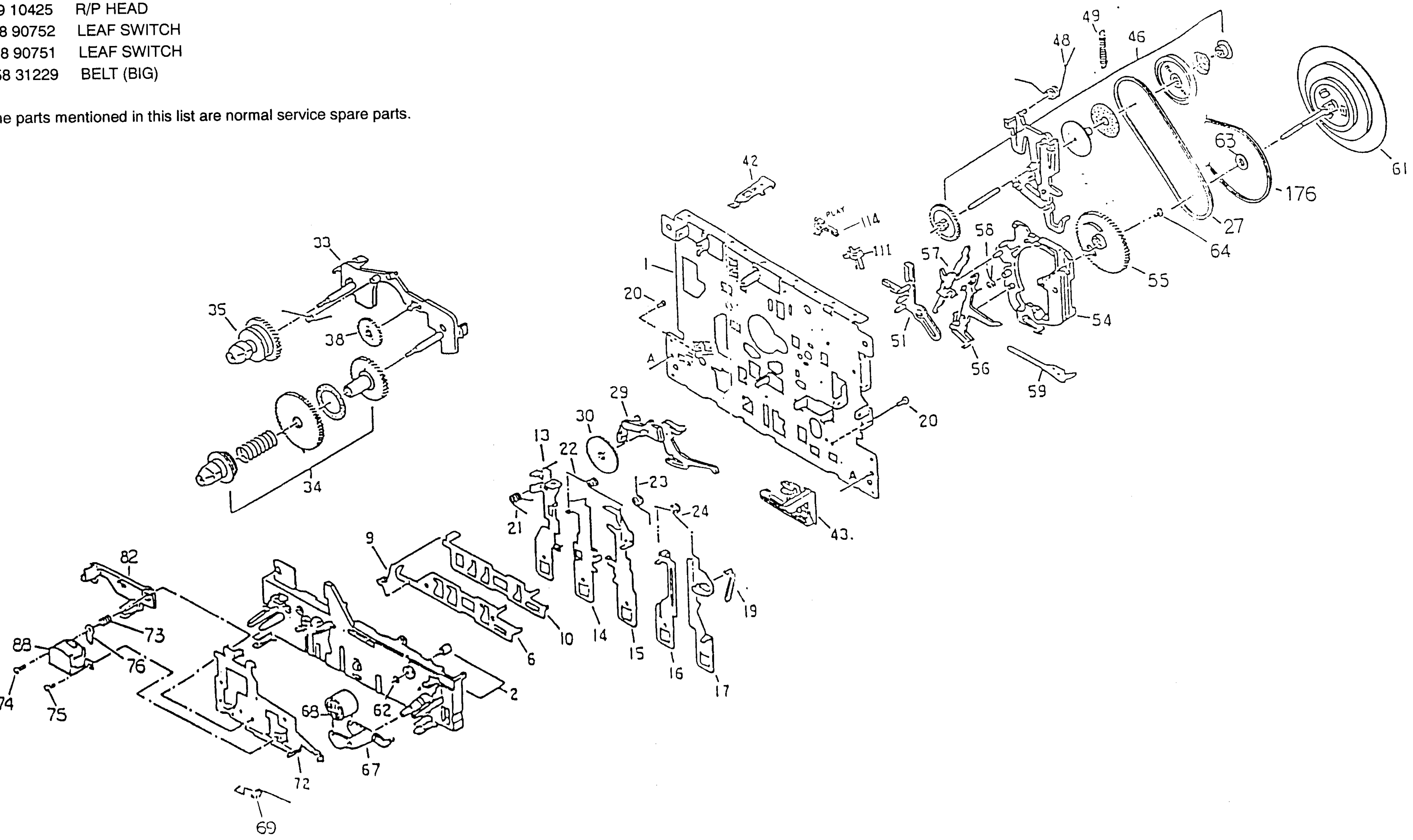
7503	4822 130 42615	BC817-40
7504	4822 130 42615	BC817-40
7505	5322 130 42136	BC848C
7508	5322 130 42136	BC848C
7512	5322 130 42136	BC848C
7513	5322 130 42136	BC848C
7514	5322 130 41983	BC858B
7515	4822 130 41327	BC327-40
7516	5322 130 42136	BC848C

Exploded View-Play(Mech A)Mechanism

MECHANCISM A - PLAYBACK DECK

27	4822 358 31231	BELT DRIVING
43	4822 403 30811	LEVER EJECT
67	4822 402 61418	ARM PINCH
68	4822 528 70785	ROLLER PINCH
88	4822 249 10425	R/P HEAD
111	4822 278 90752	LEAF SWITCH
114	4822 278 90751	LEAF SWITCH
176	4822 358 31229	BELT (BIG)

Note: Only the parts mentioned in this list are normal service spare parts.

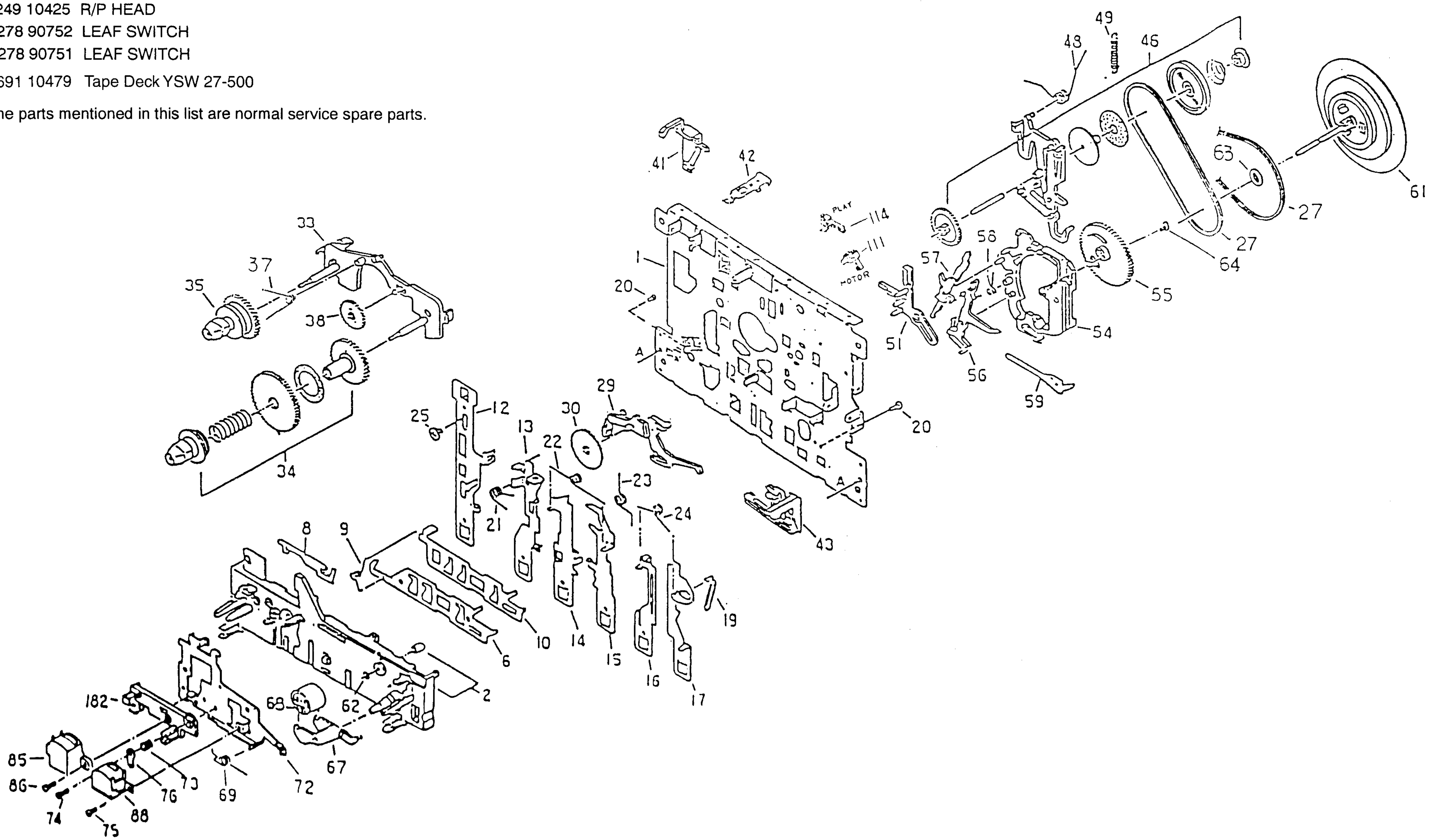

49
48
46
61
63
176
27
64
55
54
56
57
51
59
42
114
111
PLAY
1
20
A
20
A
33
35
38
34
29
30
13
22
21
23
24
43.
9
10
6
14
15
16
17
19
82
73
88
76
74
75
2
68
62
67
72
69

Exploded View-Rec/PB(Mech B)Mechanism

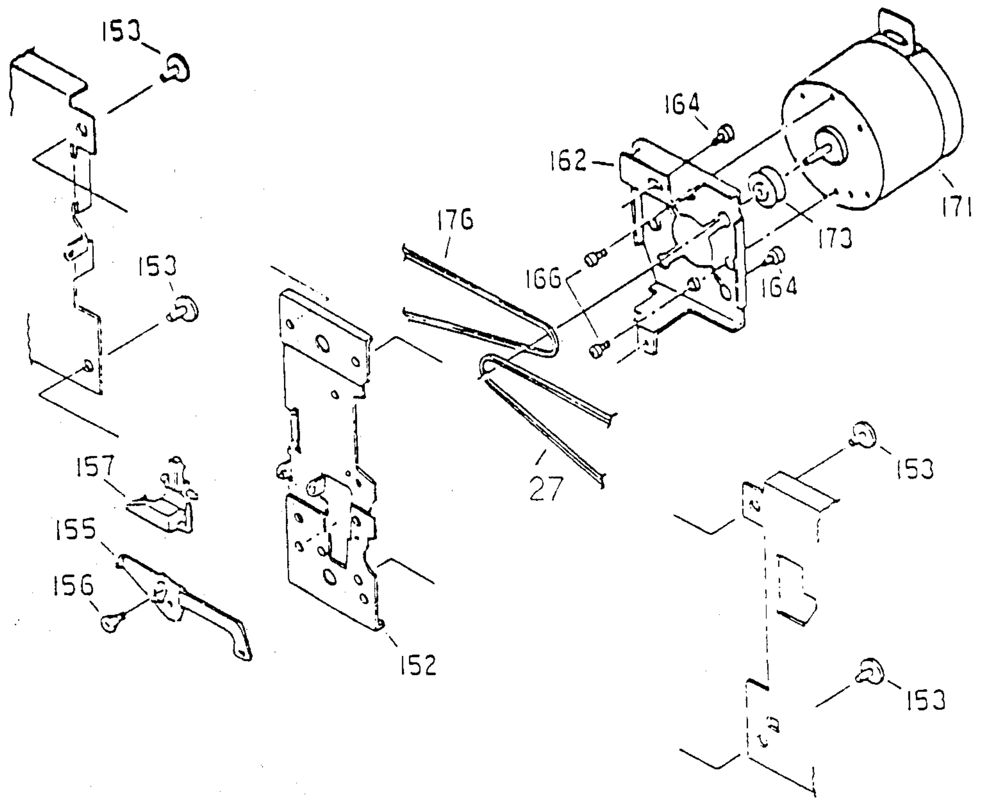
MECHANISM B - R/P DECK

27	4822 358 31231	BELT (SMALL)
43	4822 403 30811	LEVER EJECT
67	4822 402 61418	ARM PINCH
68	4822 528 70785	ARM PINCH ROLLER
85	4822 249 40276	ERASE HEAD
88	4822 249 10425	R/P HEAD
111	4822 278 90752	LEAF SWITCH
114	4822 278 90751	LEAF SWITCH
1770	4822 691 10479	Tape Deck YSW 27-500

Note: Only the parts mentioned in this list are normal service spare parts.


49
48
46
61
63
27
27
64
55
54
56
57
56
59
51
PLAY
114
MOTOR
111
41
42
1
20
A
20
A
43
29
30
23
24
19
17
16
15
14
13
22
21
12
25
10
9
8
6
2
33
37
35
38
34
182
85
86
74
75
88
76
73
69
72
68
62
67

EXPLODED VIEW-TAPE MOTOR MECHANISM


153
164
162
171
176
173
153
166
164
157
27
153
155
156
152
153

MOTOR ASSY

171	4822 361 21585	MOTOR
173	4822 528 81482	MOTOR PULLEY
176	4822 358 31229	BELT

Note: Only the parts mentioned in this list are normal sprare parts.

MECHANICAL PARTSLIST

203	4822 442 00682	Top Cover /AS660C
205	4822 450 10204	Cdc Window
208	4822 426 10339	Side Plate Left
211	4822 426 10341	Side Plate Right
257	4822 442 00603	Cover tray 3-cdc
276	4822 410 10772	Volume knob
291	4822 410 10773	Button set left /AS660C
291	4822 410 10818	Button cassette left /AS665C
294	4822 410 10774	Button right /AS660C
294	4822 410 10819	Button cassette right /AS665C
297	4822 450 10205	Display window /AS660C
297	4822 450 10213	Display window /AS665C
308	4822 443 10173	Door cassette
312	4822 410 10775	Mic level knob
318	4822 529 10322	Damper assy
370	4822 459 04352	Cabinet front
371	4822 410 10776	Button program
372	4822 410 10777	Button disc
373	4822 410 10778	Button open
374	4822 410 10779	Button jazz/rock
375	4822 410 10781	Button class/pop
376	4822 450 10206	DSC lens
377	4822 410 10782	Button prog/tuner
378	4822 410 10783	Button clock/preset
379	4822 410 10784	Button power
380	4822 410 10785	Button source
381	4822 410 10786	Cover deck button
382	4822 443 10448	Cassette door A
383	4822 443 10449	Cassette door B
384	4822 450 10207	Lens cassette door A
385	4822 450 10208	Lens cassette door B
386	4822 466 11341	DSC light guide
387	4822 410 10787	Button dbb/Incredible sound
388	4822 466 11342	Light guide CDC

MISCELLANEOUS

	4822 219 10107	Remote control
	4822 303 50063	FM aerial
	4822 321 10249	Mains cord
	4822 445 10585	Loudspeaker box 1X
	4822 736 14684	Instruction for use
5280	4822 146 10492	Transformer

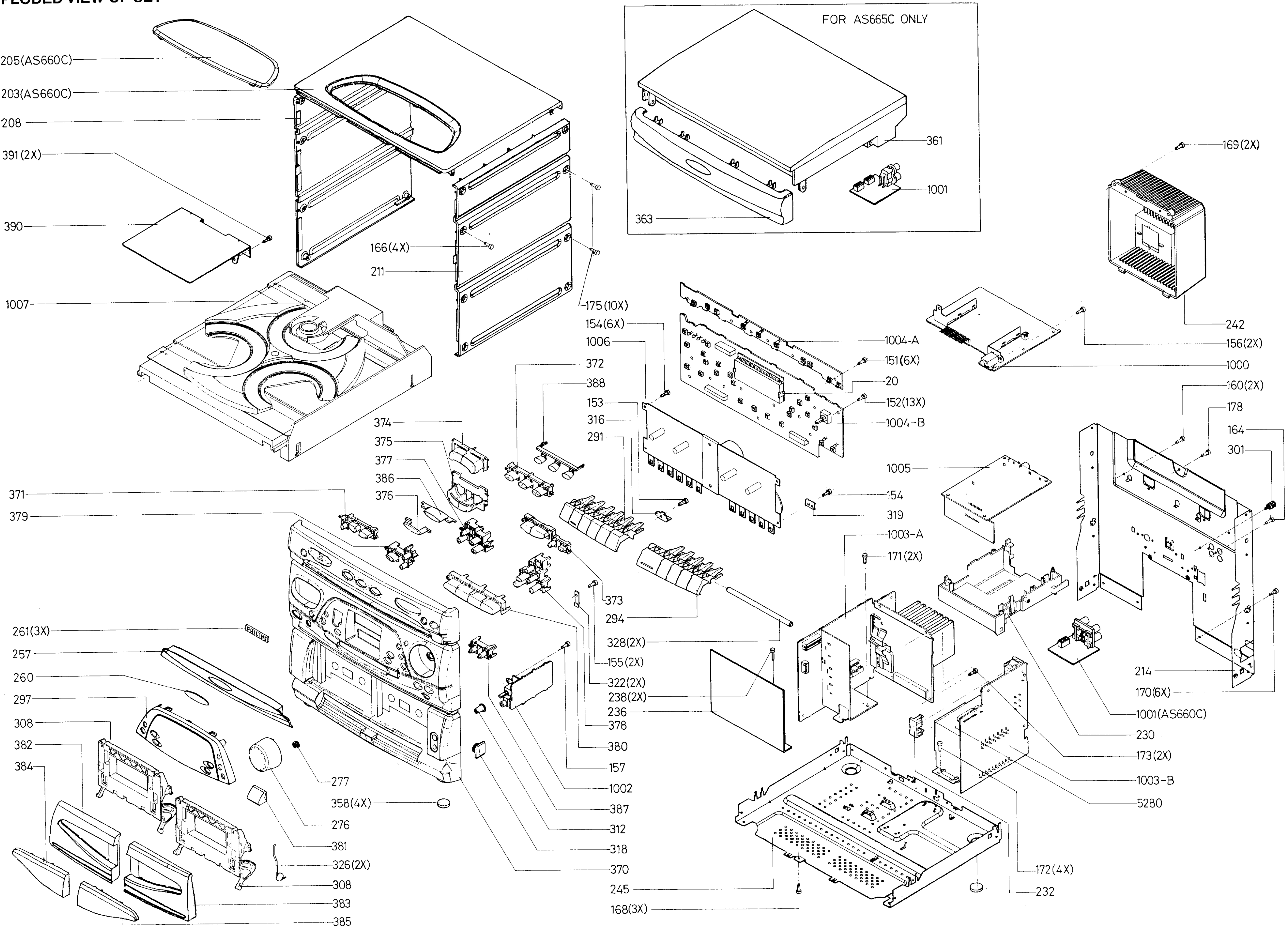
LIST OF SCREWS

151	SCR PAN TORX TAP ST ZN BK 3X10
152	SCR PAN TORX TAP ST ZN BK 3X10
153	SCR PAN TORX TAP ST ZN BK 3X10
154	SCR PAN TORX TAP ST ZN BK 3X10
155	SCR PAN TORX TAP ST ZN BK 3X10
156	SCR PAN TORX TAP ST ZN BK 3X10
157	SCR PAN TORX TAP ST ZN BK 3X10
158	SCR PAN TORX TAP ST ZN BK 3X10
160	SCR PAN TORX TAP ST ZN BK 3X10
161	SCR PAN TORX TAP ST ZN BK 3X12
162	SCR PAN TORX TAP ST ZN BK 3X12
163	SCR PAN TORX TAP ST ZN BK 3X12
164	SCR PAN TORX TAP ST ZN BK 3X12
165	SCR PAN TORX TAP ST ZN BK 3X12
166	SCR PAN TORX TAP ST ZN BK 3X12
167	SCR PAN TORX TAP ST ZN BK 3X20
168	SCR PAN TORX TAP ST ZN M3X10
169	SCR PAN TORX TAP ST ZN M3X6
170	SCR WASH TORX TAP ST ZN 3X6
171	SCR WASH TORX TAP ST ZN 3X6
172	SCR WASH TORX TAP ST ZN 3X6
173	SCR WASH TORX TAP ST ZN 3X6
174	SCR PAN TORX TAP ST ZN M3X10
175	SCR PAN TORX TAP ST ZN M3X15
178	SCR PAN TORX TAP ST ZN M3X10
234	SCR PAN TORX TAP ST ZN BK 3X12
238	SCR WASH TORX TAP ST ZN 3X6
240	SCR WASH TORX TAP ST ZN 3X6

FOR AS665C/41 ONLY

365	PIN ZN STANDARD PASS YE
366	SCR PAN TORX TAP ST ZN 2.9X13
160	SCR PAN TORX TAP ST ZN BK 3X12
161	SCR PAN TORX TAP ST ZN BK 3X10

EXPLODED VIEW OF SET


FOR AS665C ONLY
205(AS660C)
203(AS660C)
208
391(2X)
390
1007
166(4X)
211
175(10X)
361
1001
363
169(2X)
242
154(6X)
1006
1004-A
151(6X)
20
152(13X)
1004-B
156(2X)
1000
160(2X)
178
164
301
372
388
153
316
291
374
375
377
386
376
371
379
1005
154
319
1003-A
171(2X)
373
294
328(2X)
155(2X)
322(2X)
238(2X)
236
378
380
157
1002
387
312
318
370
261(3X)
257
260
297
308
382
384
277
358(4X)
276
381
326(2X)
308
383
385
214
170(6X)
1001(AS660C)
230
173(2X)
1003-B
5280
172(4X)
232
245
168(3X)

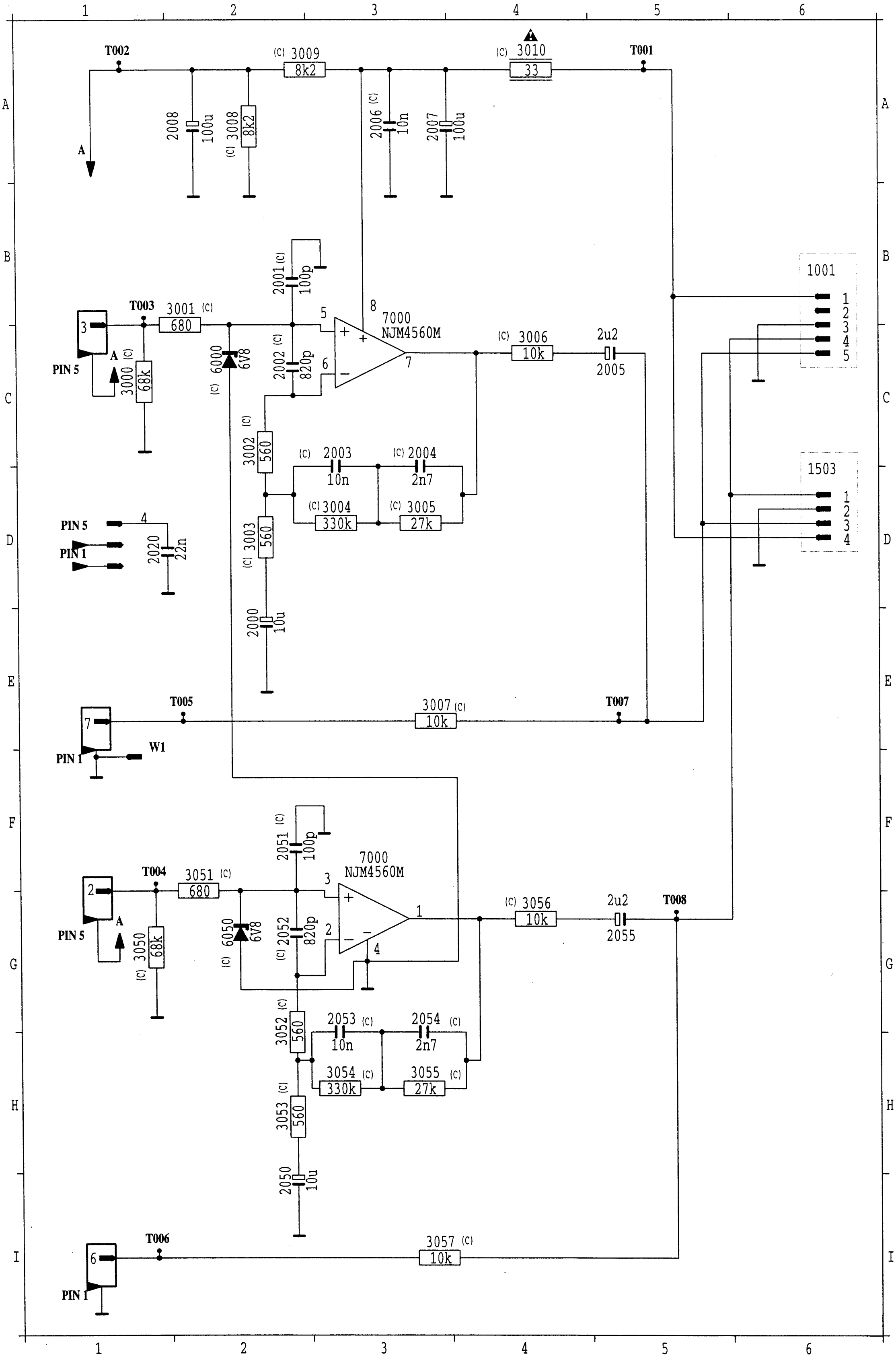
PHONO BOARD

AS660C/AS760C

TABLE OF CONTENTS

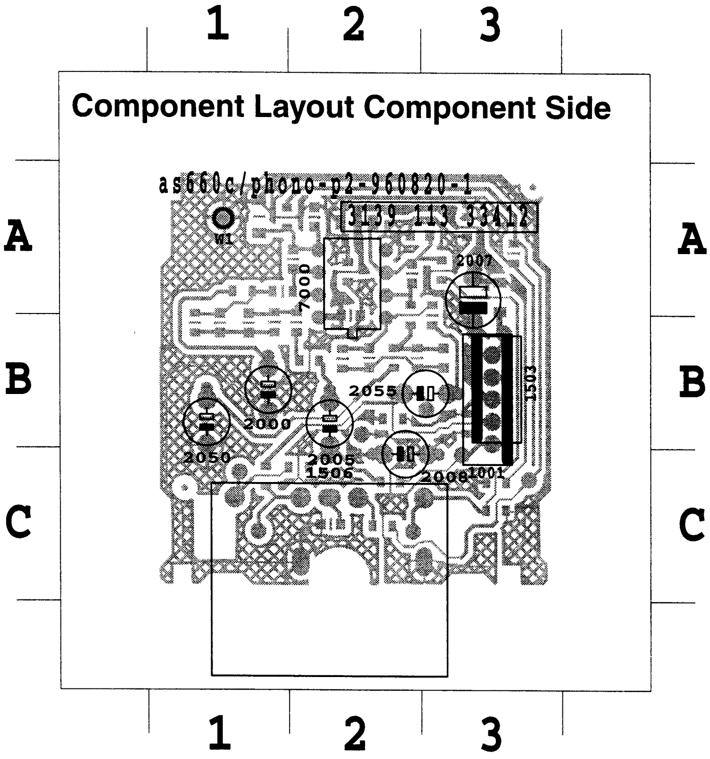
Circuit iagram 14A-2
Layout 14A-3
Partslsit 14A-4

PHONO BOARD (FOR AS660C/AS760C)

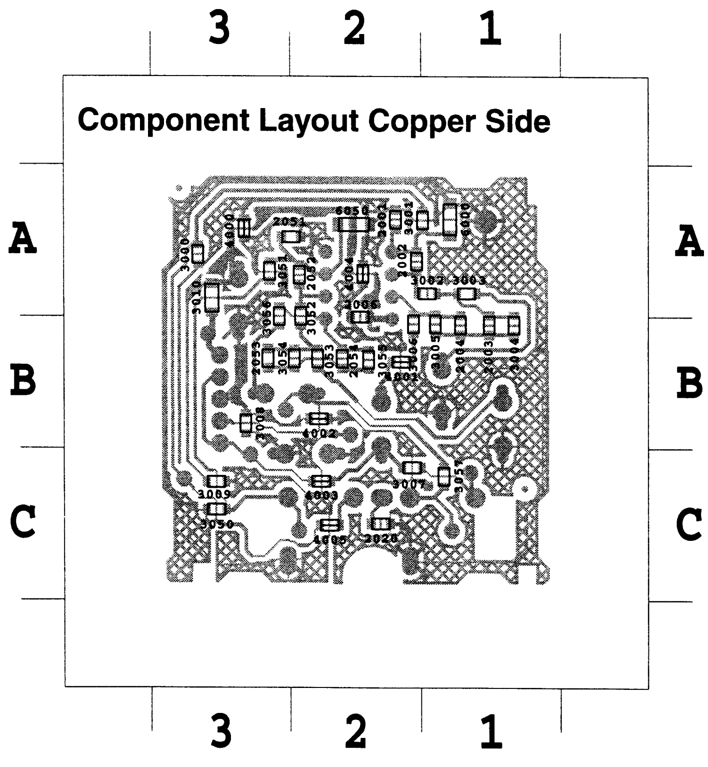

T002
(C) 3009
8k2
(C) 3010
33
T001
2008
100u
(C) 3008
8k2
2006 (C)
10n
2007
100u
A
2001 (C)
100p
T003
3001 (C)
680
8
7000
NJM4560M
5
6
7
PIN 5
A (C)
3000
68k
(C) 6000
6V8
2002 (C)
820p
(C) 3006
10k
2u2
2005
1001
1
2
3
4
5
3002 (C)
560
(C) 2003
10n
(C) 2004
2n7
(C) 3004
330k
(C) 3005
27k
1503
PIN 5
PIN 1
2020
22n
(C) 3003
560
2000
10u
T005
3007 (C)
10k
T007
PIN 1
W1
2051 (C)
100p
7000
NJM4560M
T004
3051 (C)
680
3
2
1
4
PIN 5
A
(C) 3050
68k
(C) 6050
6V8
(C) 2052
820p
(C) 3056
10k
2u2
2055
T008
3052 (C)
560
2053 (C)
10n
2054 (C)
2n7
3054 (C)
330k
3055 (C)
27k
3053 (C)
560
2050
10u
T006
3057 (C)
10k
PIN 1
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6

1001	B	6
1503	D	6
1506	D	1
2000	E	2
2001	B	2
2002	C	2
2003	C	3
2004	C	3
2005	C	5
2006	A	3
2007	A	3
2008	A	2
2020	D	1
2050	I	2
2051	F	2
2052	G	2
2053	G	3
2054	G	3
2055	G	5
3000	C	1
3001	B	2
3002	C	2
3003	D	2
3004	D	3
3005	D	3
3006	C	4
3007	E	3
3008	A	2
3009	A	3
3010	A	4
3050	G	1
3051	F	2
3052	G	2
3053	H	2
3054	H	3
3055	H	3
3056	G	4
3057	I	3
6000	C	2
6050	G	2
7000	B	3
7000	F	3
W1	F	1

PHONO BOARD (FOR AS660C/AS760C)


1
2
3
A
B
C
Component Layout Component Side
as660c/phono-p2-960820-1
3139 113 33412
W1
7000
2007
1503
2055
2000
3050
2005
1506
2008
1001

1001	B	3
1503	B	3
1506	C	2
2000	B	1
2005	B	2
2007	A	3
2008	C	2
2050	B	1
2055	B	3
7000	A	2
W1	A	1


3
2
1
A
B
C
Component Layout Copper Side
3000
3010
4000
2051
6050
3001
6000
3002
3003
2052
3051
3052
4004
3006
3056
3055
3054
2053
3053
2054
3005
3004
4001
3008
4002
3009
3050
4003
3007
3057
4005
2020

2001	A	2	3054	B	2
2002	A	2	3055	B	2
2003	B	1	3056	B	3
2004	B	1	3057	C	1
2006	B	2	4000	A	3
2020	C	2	4001	B	2
2051	A	2	4002	B	2
2052	A	2	4003	C	2
2053	B	3	4004	A	2
2054	B	2	4005	C	2
3000	A	3	6000	A	1
3001	A	1	6050	A	2
3002	A	1			
3003	A	1			
3004	B	1			
3005	B	1			
3006	B	2			
3007	C	2			
3008	B	3			
3009	C	3			
3010	A	3			
3050	C	3			
3051	A	3			
3052	A	2			
3053	B	2			

This assembly drawing shows a summary of all possible verisons.
For components used in a specific version see schematic diagram respectively partslist.

ELECTRICAL PARTSLIST PHONO/AUX BOARD

CAPACITORS

2000	4822 124 41579	10µF 20% 50V
2001	5322 122 32531	100pF 5%NP0 50V
2002	4822 122 33806	820pF10%X7R 63V
2003	4822 122 33177	10nF 20% X7R 50V
2004	4822 122 32627	2.7nF10%X7R 50V
2005	4822 124 41576	2.2µF 20% 50V
2006	4822 122 33177	10nF 20% X7R 50V
2007	4822 124 41643	100µF20% 16V
2008	4822 124 41584	100µF 20% 10V
2050	4822 124 41579	10µF 20% 50V
2051	5322 122 32531	100pF 5%NP0 50V
2052	4822 122 33806	820pF10%X7R 63V
2053	4822 122 33177	10nF 20% X7R 50V
2054	4822 122 32627	2.7nF10%X7R 50V
2055	4822 124 41576	2.2µF 20% 50V

RESISTORS

3000	4822 051 20683	68k 5% 0.1W
3001	4822 051 20681	680R 5% 0.1W
3002	4822 051 20561	560R 5% 0.1W
3003	4822 051 20561	560R 5% 0.1W
3004	4822 051 20334	330k 5% 0.1W
3005	4822 051 20273	27k 5% 0.1W
3006	4822 117 10833	10K 1% 0.1W
3007	4822 117 10833	10K 1% 0.1W
3008	4822 051 20822	8k2 5% 0.1W
3009	4822 051 20822	8k2 5% 0.1W
3010	4822 117 12556	33R 5% 125MW.
3050	4822 051 20683	68k 5% 0.1W
3051	4822 051 20681	680R 5% 0.1W
3052	4822 051 20561	560R 5% 0.1W
3053	4822 051 20561	560R 5% 0.1W
3054	4822 051 20334	330k 5% 0.1W
3055	4822 051 20273	27k 5% 0.1W
3056	4822 117 10833	10K 1% 0.1W
3057	4822 117 10833	10K 1% 0.1W

CHIP JUMPER

4000	4822 051 20008	0R Jumper
4001	4822 051 20008	0R Jumper
4002	4822 051 20008	0R Jumper
4003	4822 051 20008	0R Jumper
4004	4822 051 20008	0R Jumper

DIODES & INTEGRATED CIRCUIT

6000	4822 130 81513	BZV55-C6V8
6050	4822 130 81513	BZV55-C6V8
7000	4822 209 83274	NJM4560D

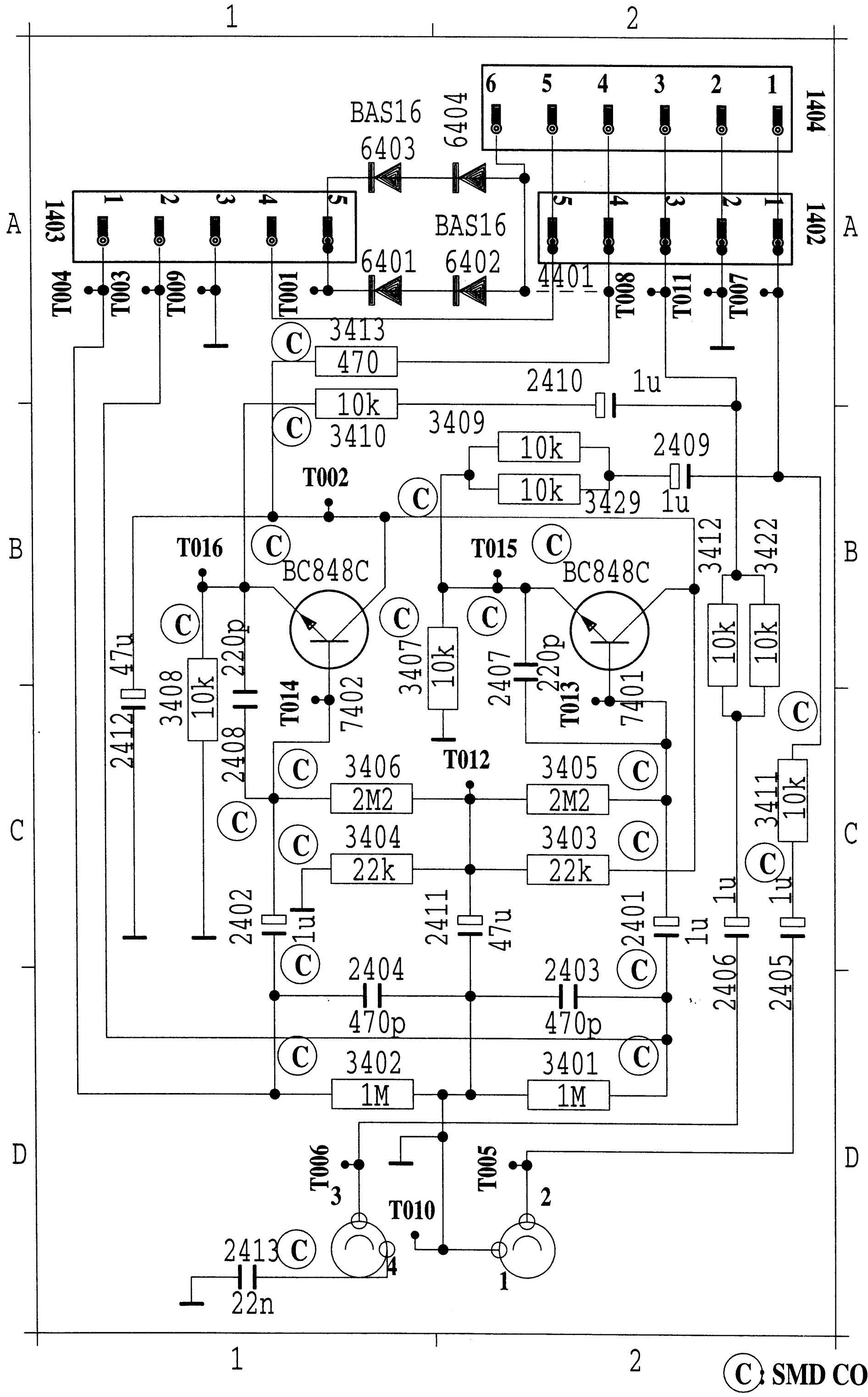
PHONO BOARD

AS665C/AS765C

TABLE OF CONTENTS

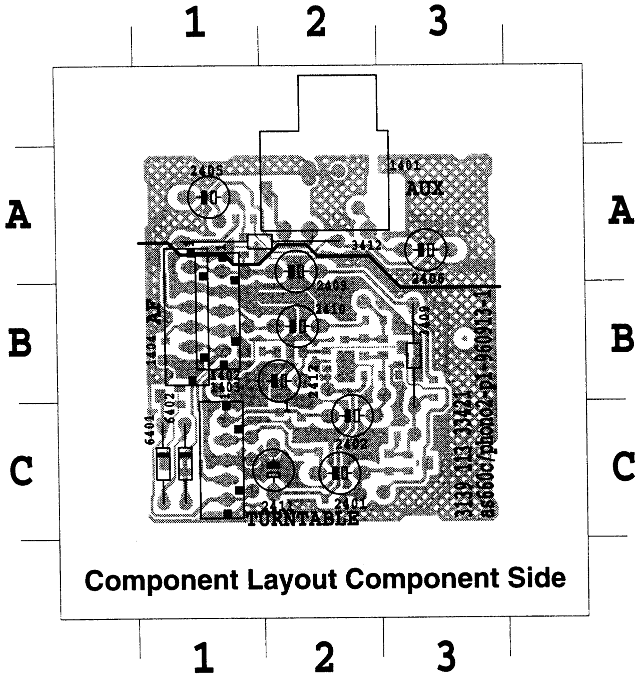
Circuit Diagram 14B-2
Layout 14B-3
Partslist 14B-4

PHONO BOARD (FOR AS665C/AS765C)


1
2
A
B
C
D
1404
6 5 4 3 2 1
1403
1 2 3 4 5
1402
5 4 3 2 1
BAS16
6403
6404
BAS16
6401
6402
4401
T004
T003
T009
T001
T008
T011
T007
3413
470
2410
1u
10k
3410
3409
10k
10k
3429
2409
1u
T002
T016
BC848C
T015
BC848C
3412
3422
10k
10k
47u
2412
3408
10k
220p
2408
T014
7402
3407
10k
2407
220p
T013
7401
3406
2M2
T012
3405
2M2
3411
10k
3404
22k
3403
22k
2402
1u
2411
47u
2401
1u
1u
1u
2406
2405
2404
470p
2403
470p
3402
1M
3401
1M
T006
3
T005
2
T010
2413
22n
4
1

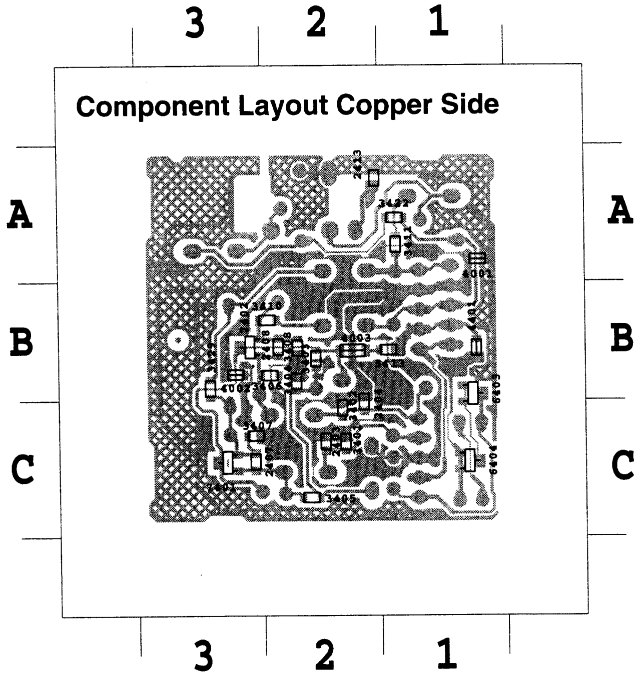
Ⓒ: SMD COMPONENTS

1402	A	2
1403	A	1
1404	A	2
2401	C	2
2402	C	1
2403	D	2
2404	D	1
2405	D	2
2406	D	2
2407	B	2
2408	C	1
2409	B	2
2410	A	2
2411	C	2
2412	C	1
2413	D	1
3401	D	2
3402	D	1
3403	C	2
3404	C	1
3405	C	2
3406	C	1
3407	B	1
3408	C	1
3409	B	2
3410	B	1
3411	C	2
3412	B	2
3413	A	1
3422	B	2
3429	B	2
4401	A	2
6401	A	1
6402	A	2
6403	A	1
6404	A	2
7401	B	2
7402	B	1


1
2
3
A
B
C
1401
AUX
2405
2406
2409
2410
2413
2412
2402
2401
2411
1404 AF
6404
6402
TURNTABLE
3139 113 33431
1
2
3

Component Layout Component Side

1401	A	2
1402	B	1
1403	C	1
1404	B	1
2401	C	2
2402	C	2
2403	C	2
2404	C	2
2405	A	1
2406	A	3
2407	C	3
2408	B	2
2409	A	2
2410	B	2
2411	C	2
2412	B	2
2413	A	2
3401	C	2
3402	C	2
3403	B	2
3404	B	2
3405	C	2
3406	B	2
3407	C	3
3408	B	2
3409	B	3
3410	B	2
3411	A	1
3412	A	1
3413	B	1
3422	A	1
3429	B	3
4001	A	1
4002	B	3
4003	B	2
4401	B	1
6401	C	1
6402	C	1
6403	B	1
6404	C	1
7401	C	3
7402	B	3


3
2
1
A
B
C
2413
3422
4001
4401
3410
3403
6403
6404
3407
3405
3
2
1

Component Layout Copper Side

2403	C	2
2404	C	2
2407	C	3
2408	B	2
2413	A	2
3401	C	2
3402	C	2
3403	B	2
3404	B	2
3405	C	2
3406	B	2
3407	C	3
3408	B	2
3410	B	2
3411	A	1
3413	B	1
3422	A	1
3429	B	3
4001	A	1
4002	B	3
4003	B	2
4401	B	1
6403	B	1
6404	C	1
7401	C	3
7402	B	3

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

ELECTRICAL PARTSLIST PHONO/AUX BOARD

CAPACITORS

2401	4822 124 40242	1µF20% 63V
2402	4822 124 40242	1µF20% 63V
2403	5322 122 32268	470pF 10% 50V
2404	5322 122 32268	470pF 10% 50V
2405	4822 124 40242	1µF20% 63V
2406	4822 124 40242	1µF20% 63V
2407	4822 122 33575	220pF 5%NPO 50V
2408	4822 122 33575	220pF 5%NPO 50V
2409	4822 124 40242	1µF20% 63V
2410	4822 124 40242	1µF20% 63V
2411	4822 124 40433	47µF20% 25V
2412	4822 124 40433	47µF20% 25V

RESISTORS

3401	4822 051 20105	1M 5% 0.1W
3402	4822 051 20105	1M 5% 0.1W
3403	4822 051 20223	22k 5% 0.1W
3404	4822 051 20223	22k 5% 0.1W
3405	4822 051 20225	2M2 5% 0.1W
3406	4822 051 20225	2M2 5% 0.1W
3407	4822 117 10833	10K 1% 0.1W
3408	4822 117 10833	10K 1% 0.1W
3409	4822 051 20473	47k 5% 0.1W
3410	4822 051 20473	47k 5% 0.1W
3411	4822 117 11149	82K 1% 0.1W
3412	4822 117 11149	82K 1% 0.1W
3413	4822 051 20471	470R 5% 0.1W

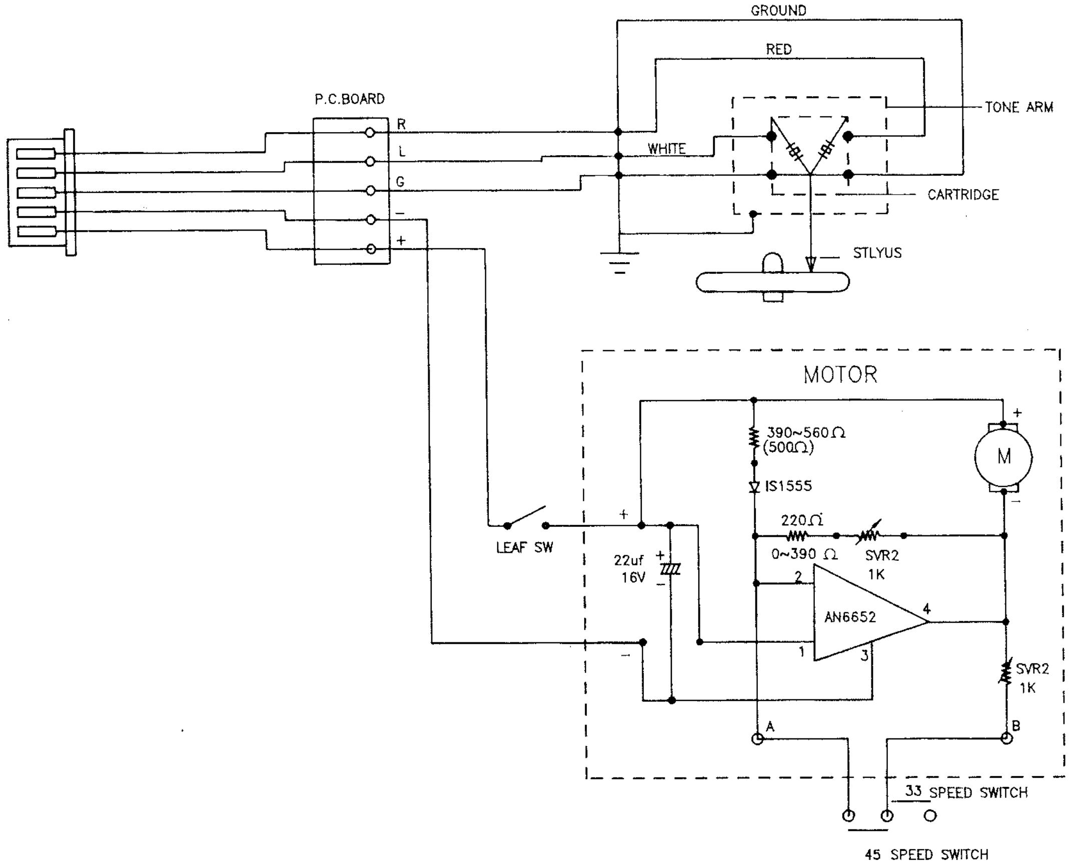
JUMPER

4004	4822 051 10008	0R 5% 0.25W

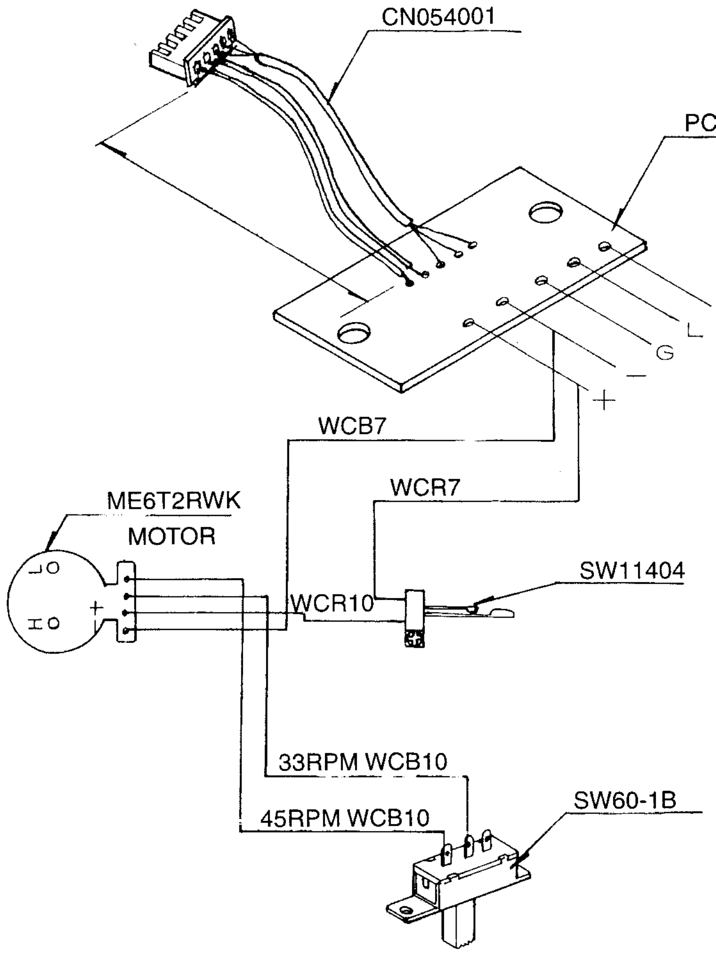
INTEGRATED CIRCUITS & TRANSISTOR

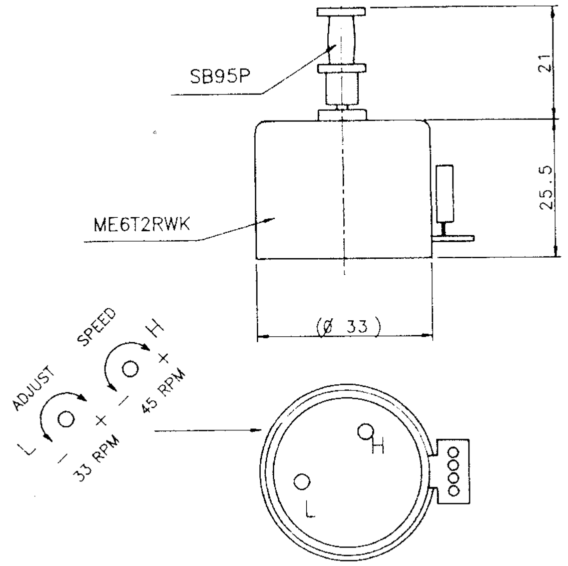
6420	4822 130 81637	PMLL4148L
6421	4822 130 81637	PMLL4148L
7401	5322 130 42136	BC848C
7402	5322 130 42136	BC848C

RECORD PLAYER
DL-40

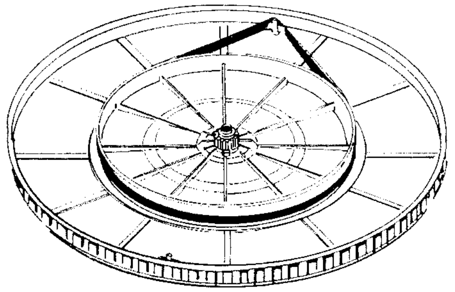

GROUND
RED
P.C.BOARD
R
L
G
−
+
WHITE
TONE ARM
CARTRIDGE
STLYUS
MOTOR
390~560Ω (500Ω)
IS1555
220Ω
0~390 Ω
SVR2 1K
AN6652
1
2
3
4
M
+
−
22uf 16V
LEAF SW
SVR2 1K
A
B
33 SPEED SWITCH
45 SPEED SWITCH

Connection of printed circuit board & motor

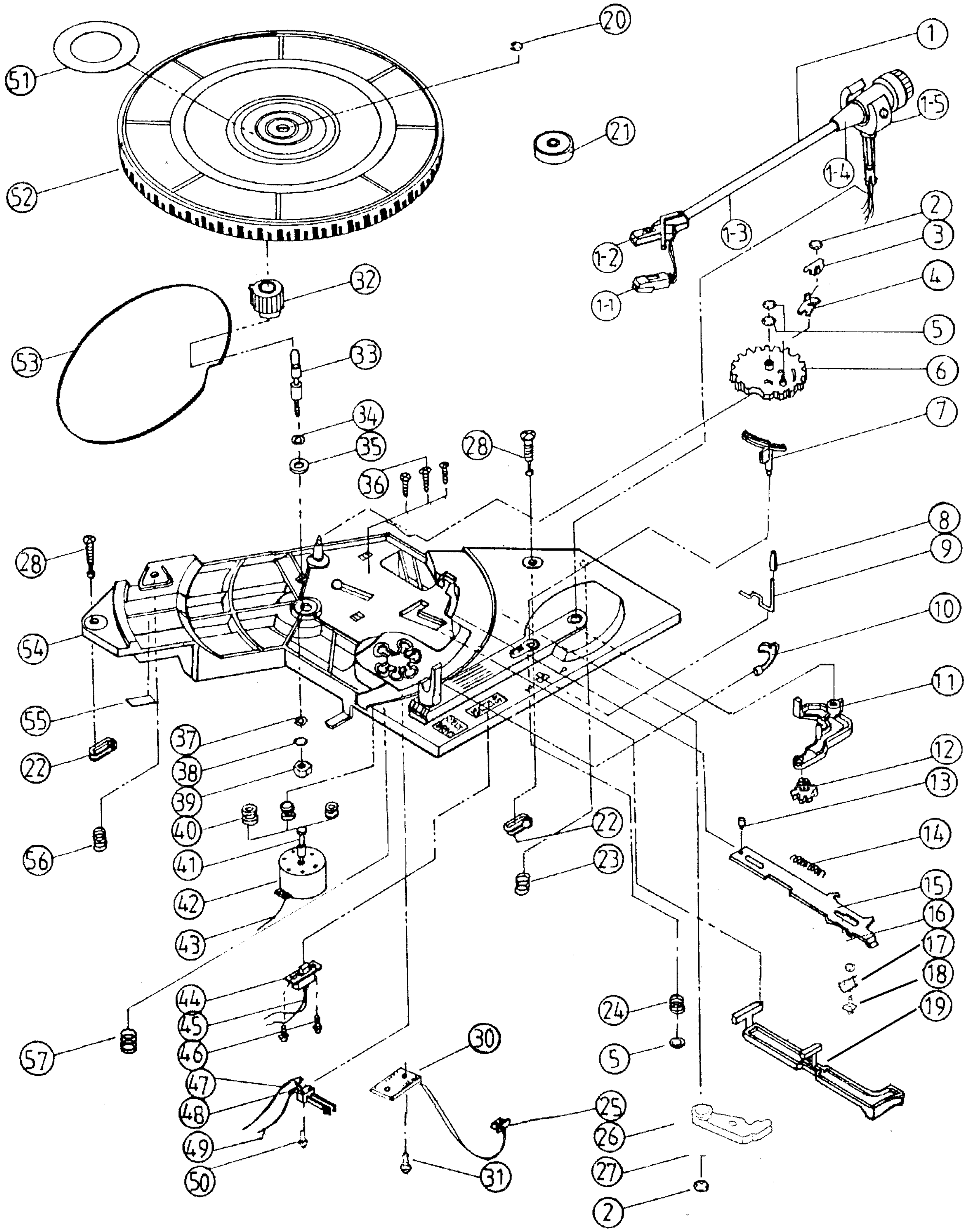

CN054001
PC938
R
L
G
−
+
WCB7
WCR7
ME6T2RWK
MOTOR
L O
H O
+
SW11404
WCR10
33RPM WCB10
45RPM WCB10
SW60-1B


SB95P
ME6T2RWK
21
25.5
(Ø 33)
ADJUST
SPEED
L
−
+
33 RPM
H
−
+
45 RPM
H
L

PLACEMENT OF BELT



EXPLODED VIEW OF RECORD PLAYER DL-40


20
1
51
1-5
21
1-4
52
2
1-3
3
1-2
4
32
1-1
5
53
33
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34
28
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24
19
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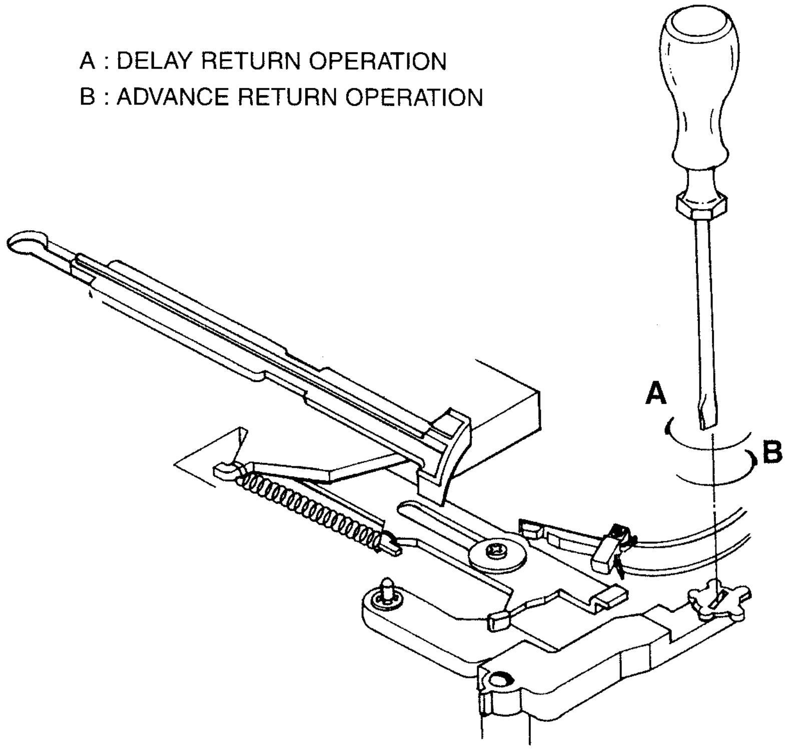
57
46
30
5
47
25
48
26
49
27
50
31
2

Record Player DL-40 Mechanical Partslist

01	4822 251 70328	Tone Arm
1-1	4822 251 30153	Cartridge
02	4822 530 80538	3mm CS Ring
05	4822 530 80539	4mm CS Ring
06	4822 522 33247	Big Gear
07	4822 402 61417	Tone Aarm Elevator
08	4822 462 41916	Plastic Cap
09	4822 402 61413	Lever, Cueing
10	4822 402 61416	Arm Clip
11	4822 402 61414	Link, Return
12	4822 402 61415	Braacket, Adjustment
14	4822 492 71081	Spring
22	4822 492 71082	Clip
23	4822 492 71079	Spring
24	4822 492 71077	Spring
26	4822 276 13817	Shut off plate, SW
27	4822 532 52438	Plastic Washer
28	4822 502 13959	Screw
32	4822 522 33225	Small Gear
34	4822 532 12731	Plastic Washer
35	4822 532 52434	Washer
37	4822 532 52449	Washer
40	4822 358 31178	Motor Rubber
41	4822 528 50332	Motor Pulley
42	4822 361 21305	Motor
44	4822 277 11655	Slide Switch
48	4822 276 13251	Leaaf Switch
51	4822 460 20803	PVC
52	4822 528 10843	Turntable Platter
53	4822 358 31178	Belt
56	4822 492 71078	Spring



A : DELAY RETURN OPERATION

B : ADVANCE RETURN OPERATION

3140

AS660C/AS665C

A97 - 163

Service
Service
Service

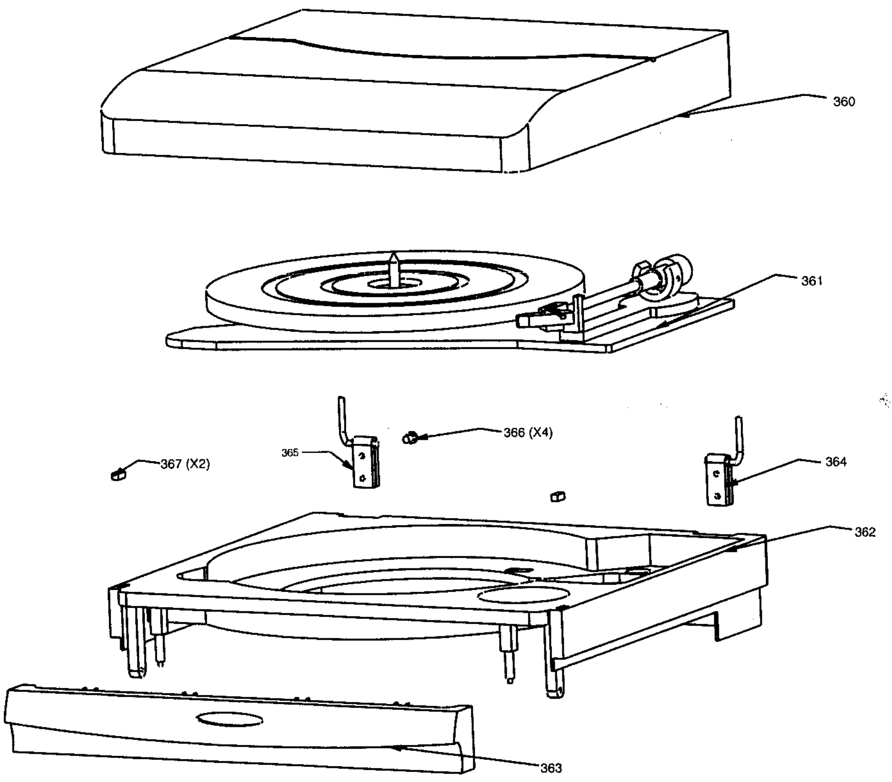
Product Service Group CE Audio

Service Information

Already published Service Informations:

Below is a portion of the exploded view showing the mounting of the Record Player that is not clearly indicated on page13-5 of the Service Manual.

Also enclosed is the update service parts list for the Main Unit printed on page 13-4 and Record player printed on page 15-2.



1997 - 08 - 08

4822 725 25744

PCS 96 773

Main Unit Mechanical parts list (page 13-4)

203	4822 442 00682	Top Cover AS660C
205	4822 450 10204	CDC Window AS660C
208	4822 426 10339	Side Panel Left
211	4822 426 10341	Side Panel Right
232	4822 402 10288	Bracket Mains Socket
257	4822 442 00603	Cover tray 3-CDC
261	4822 459 11086	Philips Brandname
276	4822 410 11034	Volume knob
277	4822 492 51374	Ring
291	4822 410 10821	Button cassette left
294	4822 410 10822	Button cassette right
297	4822 450 10205	Display window AS660C
297	4822 450 10213	Display window AS665C
308	4822 443 10173	Door cassette
312	4822 410 10775	Mic level knob
318	4822 529 10322	Damper assy
326	4822 492 11049	Spring
358	4822 462 40683	Plate (Foot)
360	4822 462 71935	Dust Cover AS665C
363	4822 442 00722	Cover Turntable AS665C
364	4822 401 11706	Clamping Block Right AS665C
365	4822 401 11707	Clamping Block Left AS665C
367	4822 462 41656	Rubber pad AS665C
370	4822 459 04352	Cabinet front
371	4822 410 10776	Button program
372	4822 410 10777	Button disc
373	4822 410 10778	Button open
374	4822 410 11211	Button jazz/rock
375	4822 410 11212	Button class/pop
376	4822 450 10206	DSC lens
377	4822 410 10782	Button prog/tuner
378	4822 410 10783	Button clock/preset
379	4822 410 10784	Button power
380	4822 410 10785	Button source
381	4822 410 10786	Cover deck button
382	4822 443 10448	Cassette door A
383	4822 443 10449	Cassette door B
384	4822 450 10207	Lens cassette door A
385	4822 450 10208	Lens cassette door B
386	4822 466 11341	DSC light guide
387	4822 410 10787	Button DBB/Incredible sound
388	4822 466 11342	Light guide CDC
5280	4822 146 10492	Mains Transformer /30/41
5280	4822 146 10491	Mains Transformer /22/34
	4822 303 50063	FM aerial

4822 303 50082	AM Frame aerial
4822 219 10107	Remote control
4822 321 10249	Mains cord
4822 321 10954	Mains cord /30
4822 445 10585	Loudspeaker box
4822 736 14684	Instruction for use /30/41
4822 736 15128	Instruction for use /22
4822 736 14878	Instruction for use /34

Note: Only the parts mentioned in this list are normal service spare parts.

Record Player DL-40 Mechanical parts list (page 15-2)

1	4822 251 70328	Tone Arm
1-1	4822 251 30153	Cartridge
2	4822 530 80538	3mm CS Ring
5	4822 530 80539	4mm CS Ring
6	4822 522 33247	Big Gear
7	4822 402 61417	Tone Arm Elevator
8	4822 462 41916	Plastic Cap
9	4822 402 61413	Lever, Cueing
10	4822 402 61416	Arm Clip
11	4822 402 61414	Link, Return
12	4822 402 61415	Bracket, Adjustment
14	4822 492 71081	Spring
21	4822 263 21184	45 RPM Adaptor
22	4822 492 71082	Clip
23	4822 492 71079	Spring
24	4822 492 71077	Spring
26	4822 466 93093	Shut Off Plate, Sw
27	4822 532 52438	Plastic Washer
28	4822 502 13959	Screw
32	4822 522 33225	Small Gear
34	4822 532 12731	Plastic Washer
35	4822 532 52434	Washer
37	4822 532 52449	Washer
40	4822 529 10373	Motor Rubber
41	4822 528 50332	Motor Pulley
42	4822 361 21305	Motor
44	4822 277 11655	Slide Switch
48	4822 276 13251	Leaf Switch
51	4822 460 20803	Pvc Sheet
52	4822 528 10843	Turntable Platter
53	4822 358 31178	Belt
56	4822 492 71078	Spring
57	4822 492 11448	Spring
59	4822 492 11449	Spring

Note: Only the parts mentioned are normal service spare parts.

AS660C/AS665C

A97 - 174

Service
Service
Service

Product Service Group CE Audi

Service Informatio

Already published Service Informations: *A97 - 163*

CHANGES DURING PRODUCTION

FRONT BOARD

* From production week 9640 onwards the following is implemented to improve the DSC and CDC Led brightness.

Change	3523 to 220R 1% 0.1W	4822 117 11503
	3524 to 220R 1% 0.1W	4822 117 11503
	3530 to 220R 1% 0.1W	4822 117 11503
	3535 to 220R 1% 0.1W	4822 117 11503
	3569 to 220R 1% 0.1W	4822 117 11503
	3570 to 220R 1% 0.1W	4822 117 11503
	3571 to 220R 1% 0.1W	4822 117 11503

* From production week 9708 onwards a new layout is implemented to facilitate the change-over to a new µProcessor software mask version which incorporate additional features for other application. The new layout and circuit diagrams are enclosed.

Delete 3400
7401 4822 209 15436 TMP87CP71F - "322S51371"

PHONO BOARD (for External Record Player version only)

* From production week 9640 onwards a new diode type is applied. The new layout and circuit diagrams are enclosed.

Change	6000 to BZX84-C6V8	5322 130 80406
	6050 to BZX84-C6V8	5322 130 80406

AF2 BOARD

* From production week 9628 a new layout is implemented to solve EMC problem. The new layout and circuit diagrams are enclosed.

Add	2559	22nF 50V 10%	5322 122 32654
	2579	22nF 50V 10%	5322 122 32654

POWER 2VA MODULE

* From production week 9725 onwards a new pc board is implemented. The new layout and circu;it diagrams are enclosed.

CDC-3 MODULE

A new CDC-3 Module is introduced into the set from production week: 9736 for sets serial no. RZ......
9738 for sets serial no. SV......
9742 for sets serial no. KT......

The electrical schematics, layout, exploded view, etc are enclosed.

Suppl.

FRONT CIRCUIT

1400	B14
1401	C 2
1402	A10
1407	E19
1409	E20
1410	K17
1411	J16
1412	K17
1413	J17
1414	G17
1415	L17
1416	L17
1417	G17
1418	G16
1419	G16
1420	G17
1423	J17
1424	K16
1425	L16
1426	L17
1427	L16
1428	H17
1431	L17
1432	M16
1433	M17
1434	M17
1435	M16
1441	B20
1442	B19
1443	C20
1444	B19
1445	C19
1446	C19
1447	A20
1448	A19
1449	A20
1450	B19
1468	L12
1499	H16
1601	I22
2401	H 5
2402	G 6
2403	D13
2406	I11
2407	I11
2408	I10
2409	I10
2410	J13
2411	C 7
2412	C 5
2413	K11
2414	C 6
2415	J11
2416	L13
2417	L13
2418	A 6
2419	A 5
2420	A 7
2421	A 4
2422	A 4
2425	G 2
2426	G 2
2427	C 2
2428	C 2
2429	C 3
2430	B 3
2431	C 3
2432	C 3
2433	C 3
2434	C 4
2435	C 4
2436	C 4
2437	C 4
2438	K19
2441	K 7
2442	L 7
2443	L10
2444	L 9
2445	L 9
2451	J 4
2452	M 4
2453	M 4
2454	M 4
2455	M 5
2456	M 6
2458	H 2
2459	J19
2460	M18
2461	M19
2462	M19
2470	B15
2471	A16
2472	A15
2488	K13
2499	K11
3402	D 6
3403	D 5
3404	D 7
3406	D 8
3407	D 8
3408	D 8
3409	D 8
3410	D 9
3411	D 9
3412	D 9
3413	D 9
3414	D 9
3415	D10
3416	D10
3417	D10
3418	D10
3419	D10
3420	D11
3421	D11
3422	D11
3423	D11
3424	D11
3425	D12
3426	D12
3427	D12
3428	D12
3429	D12
3430	D13
3431	D13
3432	B 6
3433	B 5
3434	B 7
3437	D13
3438	E13
3439	E13
3440	E13
3441	E14
3442	F14
3443	D14
3444	M15
3445	M15
3446	L16
3447	L16
3448	K16
3449	K16
3450	F14
3451	I16
3452	I16
3453	I16
3454	I16
3455	H16
3456	H15
3457	G15
3459	H 8
3460	F13
3461	F14
3462	E 7
3463	E 7
3464	E 7
3465	F13
3466	G14
3467	G13
3468	G14
3469	G14
3470	G14
3471	H14
3472	H14
3473	H13
3475	H14
3477	I13
3478	I13
3479	I13
3480	I12
3481	I12
3482	I12
3483	I12
3484	I12
3485	I11
3486	I11
3490	I10
3491	K12
3493	I10
3494	I 9
3495	I 9
3496	I 9
3497	I 9
3498	I 9
3499	I 8
3500	I 8
3501	I 8
3503	H 7
3505	H 7
3506	G 7
3507	G 7
3508	G 7
3509	G 7
3510	F 7
3512	F 7
3513	G 5
3514	F 7
3515	F 5
3516	F 7
3517	J14
3518	I13
3519	I 4
3520	I 4
3521	G 4
3522	H 4
3523	F 4
3524	F 4
3525	I13
3526	F 5
3527	E 5
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3529	M13
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3531	A 4
3532	A 4
3533	A 4
3534	A 4
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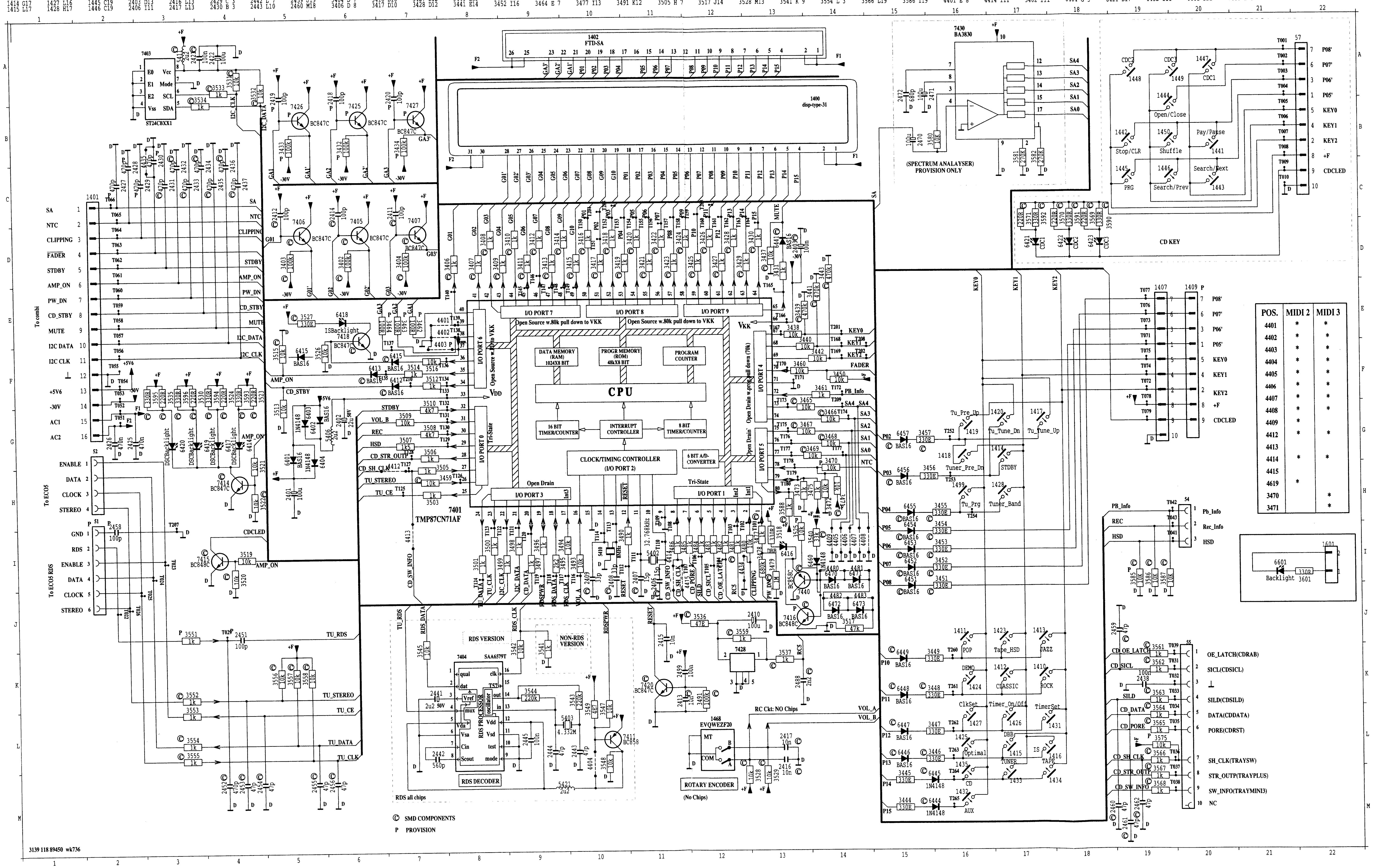
3537	K13
3540	I14
3541	K 9
3542	K 9
3543	K10
3544	K 9
3545	K 7
3547	L10
3548	L10
3549	L10
3551	J 3
3552	K 3
3553	K 3
3554	L 3
3555	L 3
3556	K 5
3557	K 5
3558	K 5
3559	J12
3561	K19
3562	K19
3563	K19
3564	L19
3565	L19
3566	L19
3567	M19
3568	M19
3569	C18
3570	C18
3571	C17
3575	L19
3580	B16
3581	B17
3582	B17
3585	I19
3586	I19
3587	I19
3588	H13
3590	D18
3591	C18
3592	C17
3593	F 4
3594	F 4
3595	F 3
3596	F 3
3601	I22
4401	E 8
4402	E 8
4403	F 7
4404	L10
4405	I14
4406	I14
4407	I14
4408	I14
4409	I14
4412	H 7
4413	I 7
4414	I11
4415	I12
4434	I12
4435	B 3
4480	I14
4481	I14
4482	J14
4483	J14
51	H 2
52	G 2
54	H20
5402	I11
5403	L 9
5406	G 6
5410	I10
5411	A 3
5421	M 9
55	K20
57	A22
6401	G 5
6402	G 5
6403	G 5
6404	G 5
6412	F 7
6413	F 6
6414	G 4
6415	F 7
6415	F 5
6416	I13
6417	G 4
6418	E 6
6419	G 4
6420	G 3
6421	D17
6422	D18
6423	D18
6441	D13
6444	M16
6445	M16
6446	L15
6447	L15
6448	K15
6449	K15
6451	I15
6452	I15
6453	I15
6454	I15
6455	H15
6456	H15
6457	G15
6460	I14
6470	I14
6471	I14
6472	J14
6473	J14
6601	I21
7401	H 8
7403	A 3
7404	K 8
7405	C 6
7406	C 5
7407	C 7
7411	L10
7414	H 4
7415	I 4
7416	J13
7418	E 6
7420	K11
7425	B 6
7426	B 5
7427	B 7
7428	K12
7430	A16
7440	J13



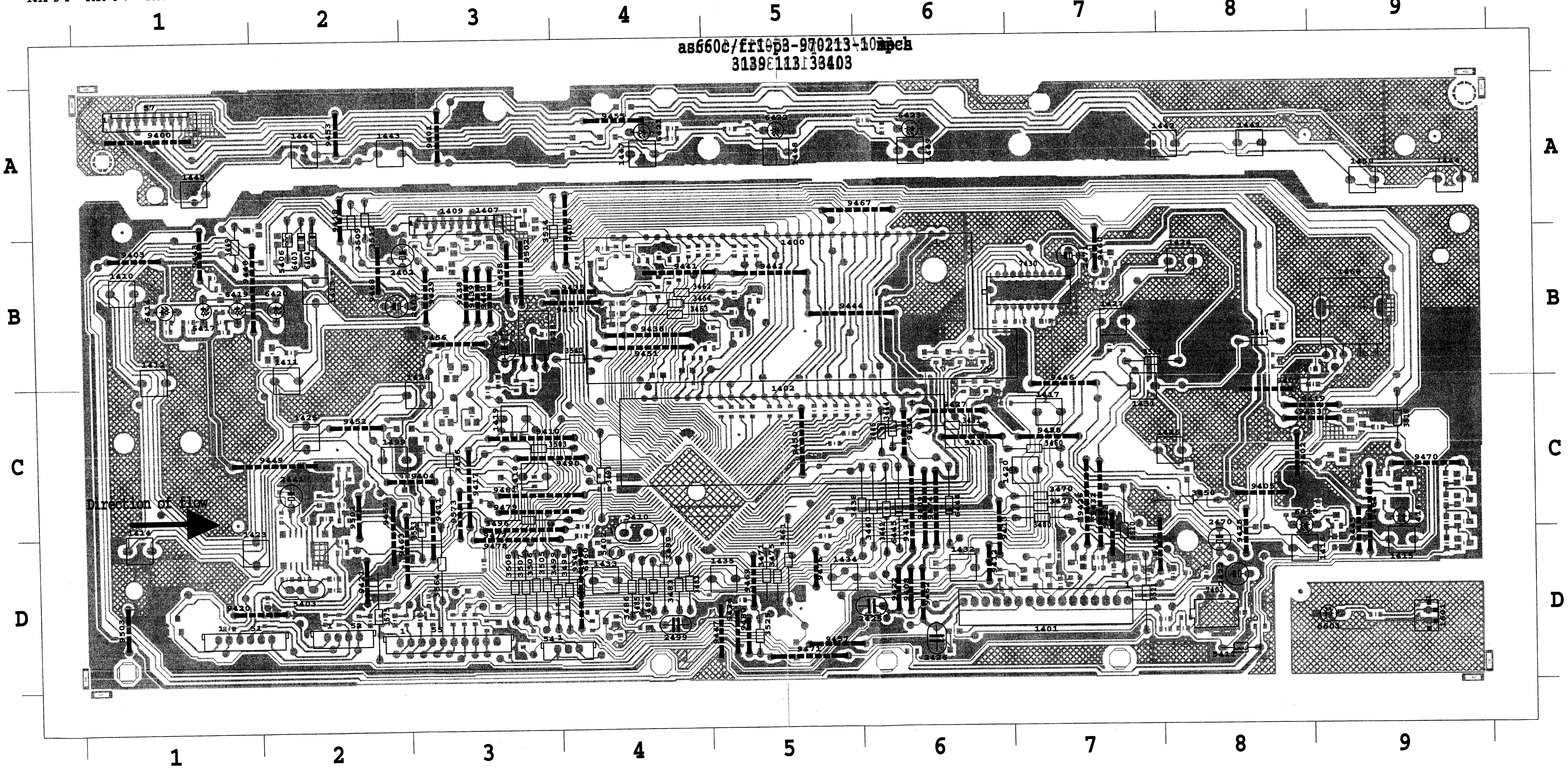
1402
FTD-SA
1400
disp-type-31
F1
F2
7403
ST24CBXX1
E0
E1
E2
Vss
Vcc
Mode
SCL
SDA
I2C_DATA
I2C_CLK
7426
7425
7427
7406
7405
7407
BC847C
GA1
GA2
GA3
GA1'
GA2'
GA3'
G01
G02
G03
G01'
G02'
G03'
-30V
+F
1401
SA
NTC
CLIPPING
FADER
STDBY
AMP_ON
PW_DN
CD_STBY
MUTE
I2C DATA
I2C CLK
+5V6
-30V
AC1
AC2
To combi
ENABLE
DATA
CLOCK
STEREO
To ECO5
GND
RDS
To ECO5 RDS
7414
7415
BC847C
BC848C
CDCLED
7418
ISBacklight
7401
TMP87CN71AF
I/O PORT 7
I/O PORT 8
I/O PORT 9
I/O PORT 6
I/O PORT 4
I/O PORT 5
I/O PORT 0
I/O PORT 3
I/O PORT 1
Open Source w.80k pull down to VKK
DATA MEMORY (RAM) 1024X8 BIT
PROGR MEMORY (ROM) 48kX8 BIT
PROGRAM COUNTER
CPU
16 BIT TIMER/COUNTER
INTERRUPT CONTROLLER
8 BIT TIMER/COUNTER
CLOCK/TIMING CONTROLLER (I/O PORT 2)
6 BIT A/D-CONVERTER
Open Drain
Tri-State
VKK
VDD
RESET
32.768kHz
8MHz
7404
SAA6579T
RDS PROCESSOR
RDS DECODER
RDS VERSION
NON-RDS VERSION
RDS all chips
4.332M
7411
BC858
7420
BC847C
7428
1468
EVQWEZF20
ROTARY ENCODER
(No Chips)
RC Ckt: NO Chips
VOL_A
VOL_B
7440
7416
BC858C
BC848C
7430
BA3830
SA0
SA1
SA2
SA3
SA4
(SPECTRUM ANALAYSER)
PROVISION ONLY
CDC1
CDC2
CDC3
Open/Close
Stop/CLR
Shuffle
Pay/Pause
PRG
Search/Prev
Search/Next
CD KEY
P08'
P07'
P06'
P05'
KEY0
KEY1
KEY2
CDCLED
1407
1409
Tu_Pre_Up
Tu_Tune_Dn
Tu_Tune_Up
Tuner_Pre_Dn
STDBY
Tu_Prg
Tuner_Band
POP
Tape_HSD
JAZZ
DEMO
CLASSIC
ROCK
ClkSet
Timer_On/Off
TimerSet
DBB
Optimal
IS
TUNER
TAPE
CD
AUX
PB_Info
REC
HSD
Pb_Info
Rec_Info
54
1601
6601
Backlight
55
OE_LATCH(CDRAB)
SICL(CDSICL)
SILD(CDSILD)
DATA(CDDATA)
PORE(CDRST)
SH_CLK(TRAYSW)
STR_OUTP(TRAYPLUS)
SW_INFO(TRAYMINI3)
NC
TU_RDS
TU_STEREO
TU_CE
TU_DATA
TU_CLK
CD_SW_INFO
SMD COMPONENTS
PROVISION

POS.	MIDI 2	MIDI 3
4401	*	*
4402	*	*
4403	*	*
4404	*	*
4405	*	*
4406	*	*
4407	*	*
4408	*	*
4409	*	
4412	*	*
4413		
4414	*	*
4415		
4619	*	
3470		*
3471		*

3139 118 89450 wk736

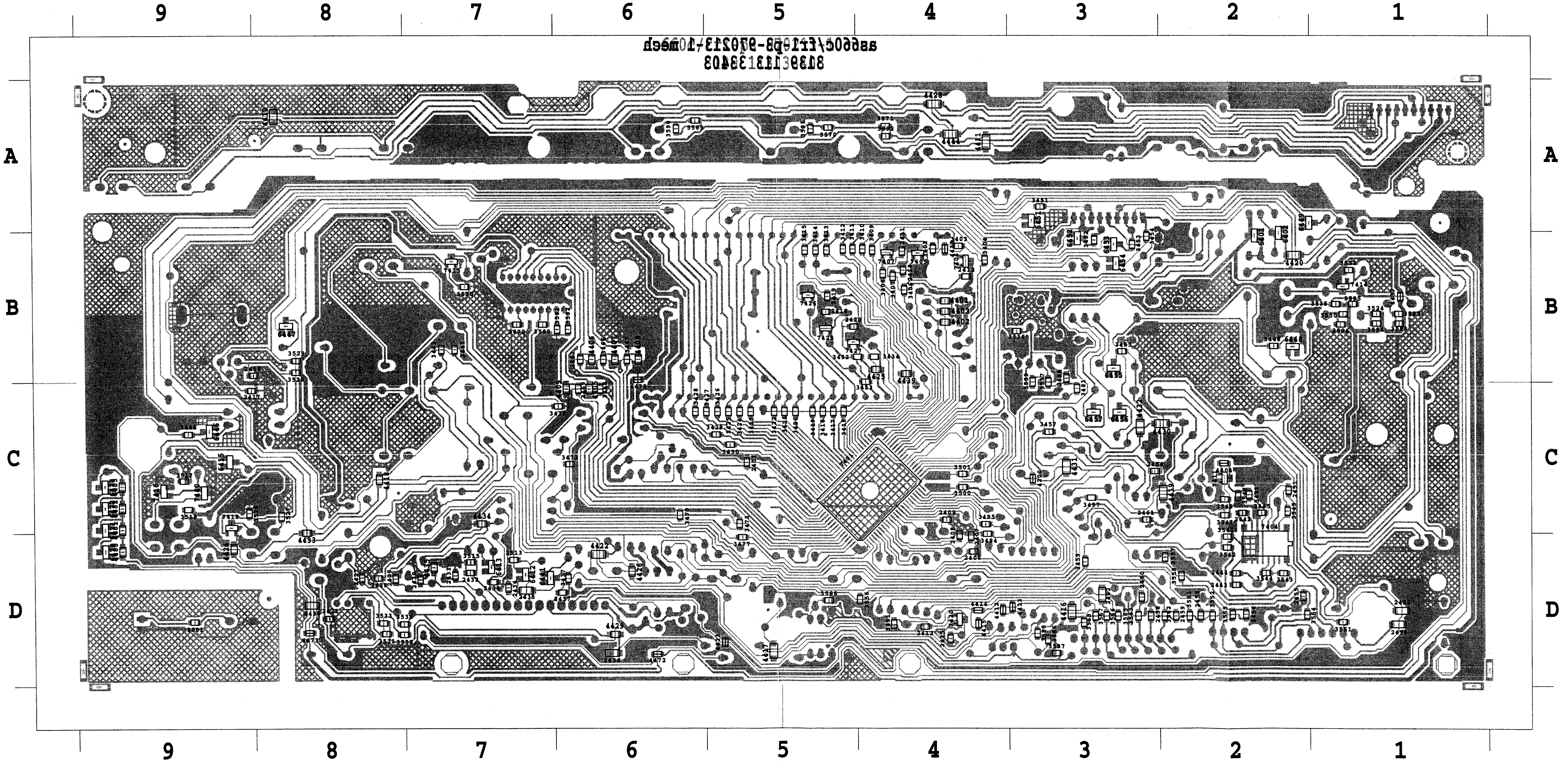
FRONT COMPONENT LAYOUT

1400	B 5
1401	D 7
1402	C 5
1407	A 3
1409	A 3
1410	B 1
1411	B 2
1412	B 1
1413	B 2
1414	D 1
1415	D 9
1416	D 8
1417	C 7
1418	C 3
1419	C 3
1420	C 7
1423	D 1
1424	B 8
1425	C 2
1426	C 8
1427	B 7
1428	C 3
1431	C 7
1432	D 6
1433	D 4
1434	D 5
1435	D 5
1441	A 8
1442	A 8
1443	A 2
1444	A 9
1445	A 1
1446	A 2
1447	A 4
1448	A 5
1449	A 6
1450	A 9
1468	B 9
1499	C 2
1601	D 9
2401	B 2
2402	B 2
2410	B 3
2422	D 8
2425	D 6
2426	D 6
2441	C 2
2470	D 8
2471	B 7
2499	D 4
3431	C 6
3438	C 6
3440	C 6
3442	C 6
3444	C 6
3445	C 6
3447	B 8
3449	B 1
3450	C 8
3456	C 3
3460	C 7
3461	D 5
3462	B 4
3463	B 4
3464	B 4
3470	C 7
3471	D 5
3475	D 5
3478	C 7
3480	C 7
3482	D 4
3483	D 4
3484	D 4
3485	D 4
3486	D 4
3490	D 4
3493	C 4
3496	C 3
3498	D 4
3499	D 3
3503	C 3
3505	D 3
3506	D 3
3507	D 3
3508	D 3
3509	A 2
3510	D 7
3512	A 2
3514	A 4
3516	C 9
3519	B 7
3521	D 7
3525	D 5
3540	B 4
3553	C 3
3564	D 3
3575	D 2
5402	D 4
5403	D 2
5406	B 2
5410	C 4
5411	D 8
6403	B 2
6404	B 2
6414	B 1
6416	C 9
6417	B 1
6418	C 8
6419	B 1
6420	B 2
6421	A 4
6422	A 5
6423	A 6
6444	C 6
6445	C 6
6460	D 4
6601	D 9
7403	D 8
7428	B 3
7430	B 7
9400	A 1
9401	A 3
9402	C 8
9403	B 1
9404	C 3
9405	C 8
9406	A 4
9407	C 8
9408	D 6
9409	C 6
9410	C 3
9411	C 3
9412	D 6
9413	C 6
9414	C 6
9415	D 7
9416	C 6
9417	C 3
9418	A 2
9419	C 9
9420	D 1
9421	D 2
9422	D 6
9423	D 7
9424	D 5
9425	D 8
9426	C 7
9427	C 6
9428	C 7
9429	B 3
9432	C 7
9433	C 9
9434	C 6
9435	B 4
9436	B 4
9437	B 4
9438	B 3
9439	B 3
9440	B 3
9441	B 4
9442	B 5
9443	B 1
9444	B 5
9445	D 9
9446	C 7
9447	D 5
9448	B 1
9449	C 2
9450	C 5
9451	B 4
9452	C 2
9453	A 2
9455	A 4
9456	B 3
9457	D 5
9458	B 3
9459	C 2
9460	B 7
9462	D 6
9463	D 2
9464	C 9
9467	A 6
9468	B 2
9469	D 5
9470	C 9
9471	D 5
9474	C 6
9476	D 5
9477	C 3
9478	D 3
9479	C 3
9480	D 5
9481	C 3
9490	C 3
9501	C 2
9502	B 3
9503	D 1
9548	D 4
9573	C 3



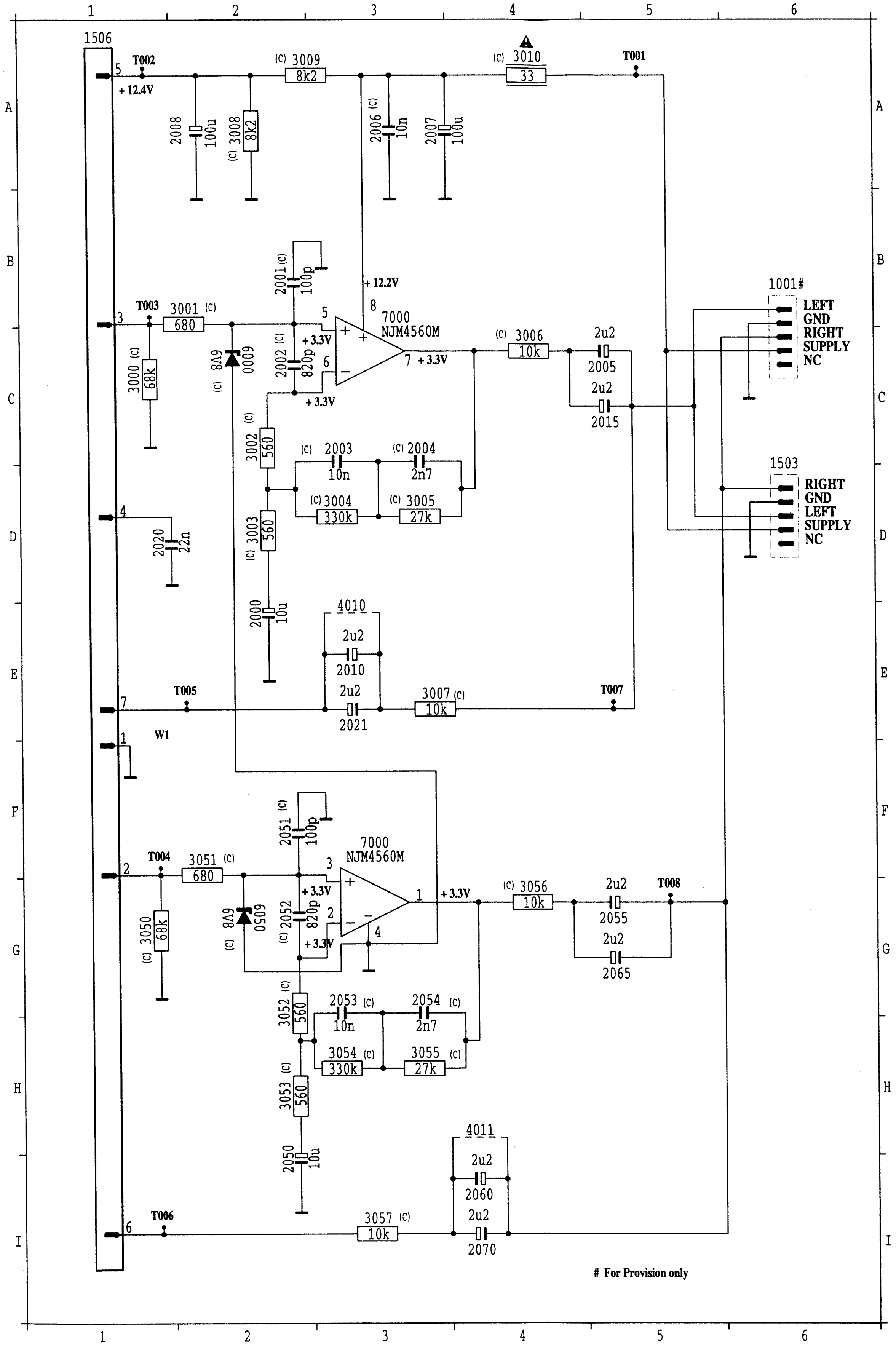
FRONT CHIP LAYOUT

2408	D 4
2409	C 4
2411	B 4
2412	B 4
2413	D 4
2414	B 4
2415	D 4
2419	B 5
2420	B 5
2421	D 8
2427	D 8
2428	D 8
2429	D 8
2430	D 7
2434	D 7
2435	D 7
2436	D 6
2437	D 6
2438	D 3
2442	C 2
2443	D 2
2452	D 1
2453	D 2
2454	C 3
2455	D 2
2456	D 2
2458	D 1
2459	D 2
2472	B 7
2488	B 3
3402	B 4
3403	B 4
3404	B 4
3406	B 4
3407	B 4
3411	B 5
3412	B 5
3413	B 5
3414	B 5
3415	B 5
3416	C 5
3417	C 5
3421	C 5
3422	C 5
3423	C 5
3424	C 5
3425	C 5
3426	C 5
3427	C 5
3432	B 4
3433	C 4
3434	B 4
3437	D 6
3439	C 6
3441	B 7
3443	B 7
3452	B 3
3453	B 3
3454	B 3
3455	B 3
3457	C 3
3459	D 3
3465	B 6
3469	C 6
3472	C 6
3473	C 5
3477	D 5
3479	C 6
3481	C 3
3491	D 4
3500	C 4
3501	C 4
3513	D 7
3515	D 7
3517	C 9
3518	C 9
3520	B 7
3526	C 9
3527	C 8
3528	B 8
3529	B 8
3530	B 1
3531	D 8
3532	D 8
3536	B 3
3537	C 3
3541	D 2
3542	D 2
3543	D 2
3544	D 2
3545	C 2
3551	D 1
3552	D 2
3554	D 2
3555	D 2
3556	D 4
3557	D 2
3558	D 2
3563	D 3
3565	D 3
3566	D 3
3567	D 3
3568	D 3
3569	A 6
3570	A 5
3582	B 6
3585	D 3
3586	D 3
3587	D 3
3588	D 5
3590	A 6
3591	A 5
3595	B 1
3596	B 1
3601	D 9
4200	C 3
4401	B 4
4402	B 4
4403	B 4
4407	B 6
4408	B 6
4409	C 6
4410	A 8
4411	A 4
4412	D 4
4413	D 3
4417	D 5
4418	C 8
4419	C 2
4420	B 2
4422	D 6
4423	D 5
4424	D 9
4429	D 6
4430	C 2
4431	C 3
4432	C 3
4433	D 8
4434	C 7
4435	D 7
4439	B 4
4444	A 4
4472	D 6
4473	D 8
4475	B 6
4480	D 9
4481	C 9
6401	B 2
6402	B 2
6412	D 7
6413	D 7
6415	C 9
6441	D 7
6446	C 9
6451	A 3
6452	B 3
6453	B 3
6454	B 3
6455	B 3
6456	C 3
6457	C 3
6473	C 9
7401	C 4
7404	D 2
7405	B 4
7406	B 4
7407	B 4
7411	C 2
7418	C 9
7420	D 4
7425	B 5
7426	B 5
7427	B 5
7440	C 9



PCS 96 827

PHONO CIRCUIT *(For External Record Player)*

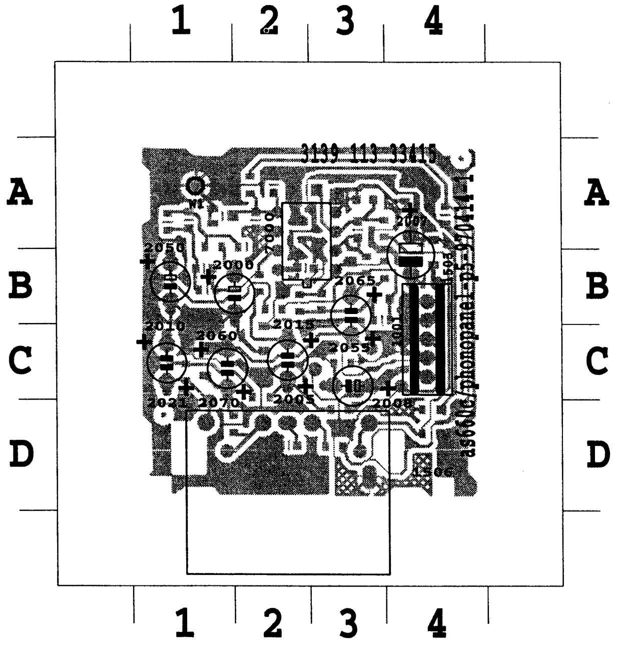

1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
1506
T002
+12.4V
(C) 3009
8k2
(C) 3010
33
T001
2008
100u
(C) 3008
8k2
2006 (C)
10n
2007
100u
2001 (C)
100p
+12.2V
T003
3001 (C)
680
3000 (C)
68k
6V8
6009
(C)
2002 (C)
820p
+3.3V
7000
NJM4560M
(C) 3006
10k
2u2
2005
2u2
2015
+3.3V
3002 (C)
560
(C) 2003
10n
(C) 2004
2n7
(C) 3004
330k
(C) 3005
27k
1001#
LEFT
GND
RIGHT
SUPPLY
NC
1503
RIGHT
GND
LEFT
SUPPLY
NC
2020
22n
3003 (C)
560
2000
10u
4010
2u2
2010
T005
2u2
2021
3007 (C)
10k
T007
W1
2051 (C)
100p
7000
NJM4560M
T004
3051 (C)
680
3050 (C)
68k
6V8
6050
(C)
2052 (C)
820p
+3.3V
(C) 3056
10k
2u2
2055
T008
2u2
2065
3052 (C)
560
2053 (C)
10n
2054 (C)
2n7
3054 (C)
330k
3055 (C)
27k
3053 (C)
560
2050
10u
4011
2u2
2060
T006
3057 (C)
10k
2u2
2070

For Provision only

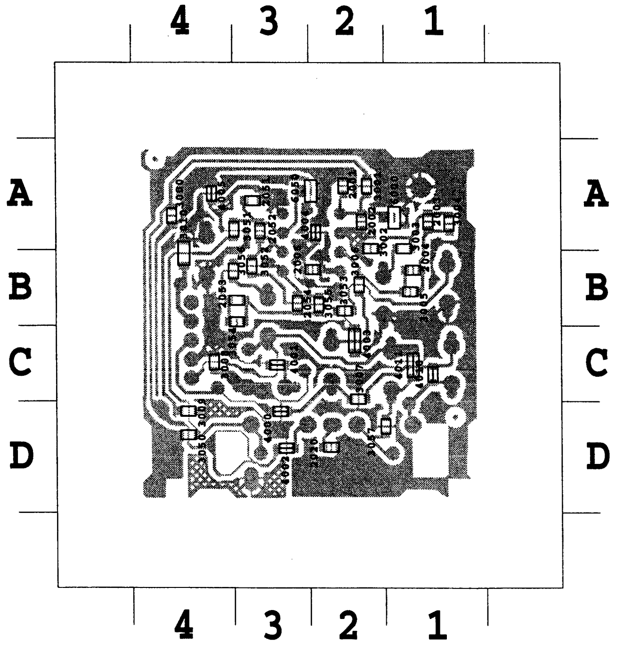
1001	B	6
1503	D	6
1506	A	1
2000	E	2
2001	B	2
2002	C	2
2003	C	3
2004	C	3
2005	C	5
2006	A	3
2007	A	3
2008	A	2
2010	E	3
2015	C	5
2020	D	1
2021	E	3
2050	I	2
2051	F	2
2052	G	2
2053	G	3
2054	G	3
2055	G	5
2060	I	4
2065	G	5
2070	I	4
3000	C	1
3001	B	2
3002	C	2
3003	D	2
3004	D	3
3005	D	3
3006	C	4
3007	E	3
3008	A	2
3009	A	3
3010	A	4
3050	G	1
3051	F	2
3052	G	2
3053	H	2
3054	H	3
3055	H	3
3056	G	4
3057	I	3
4010	E	3
4011	H	4
6000	C	2
6050	G	2
7000	B	3
7000	F	3

PHONO COMPONENT AND CHIP LAYOUT *(For External Record Player)*

1001	C	4
1503	B	4
1506	D	2
2000	B	2
2005	C	2
2007	B	4
2008	C	3
2010	C	1
2015	C	2
2021	C	1
2050	B	1
2055	B	3
2060	C	1
2065	B	3
2070	C	1
7000	A	2
W1	A	1

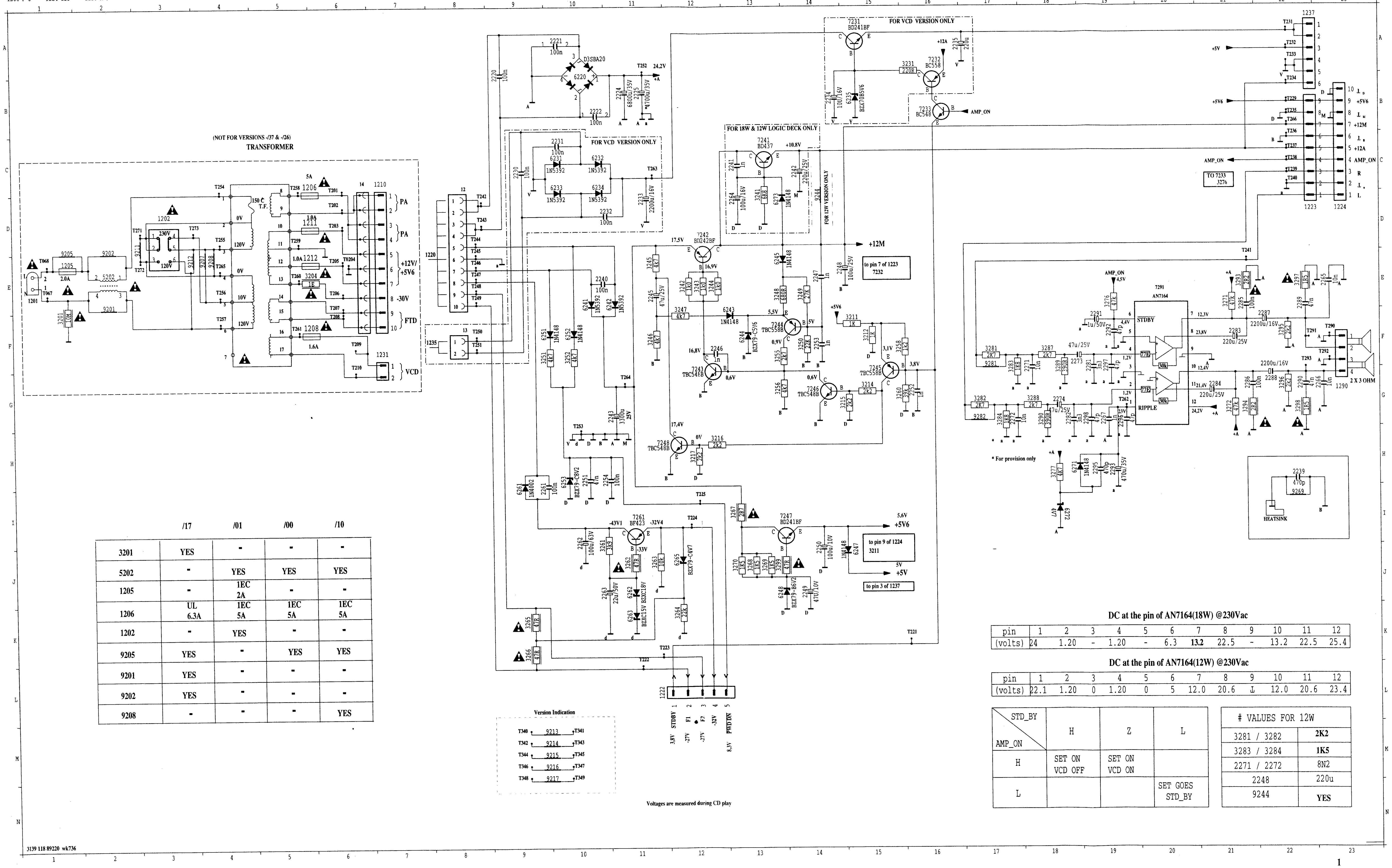

1
2
3
4
A
B
C
D
3139 113 33415

2001	A	2
2002	A	2
2003	A	1
2004	B	1
2006	B	2
2020	D	2
2051	A	3
2052	A	3
2053	B	3
2054	B	3
3000	A	4
3001	A	2
3002	A	2
3003	A	1
3004	A	1
3005	B	1
3006	B	2
3007	C	2
3008	C	4
3009	D	4
3010	B	4
3050	D	4
3051	A	3
3052	B	3
3053	B	2
3054	B	3
3055	B	2
3056	B	3
3057	D	1
4000	D	3
4001	C	3
4002	D	3
4003	C	2
4004	A	2
4005	A	4
6000	A	1
6050	A	2



POWER 2VA CIRCUIT

Part	Location
12	C 8
1201	E 1
1202	D 3
1205	E 1
1206	C 6
1208	F 6
1210	C 7
1211	D 6
1212	E 6
1222	L11
1223	D22
1224	D23
1231	F 7
1237	A22
1290	G23
13	F 8
14	C 6
2220	A 9
2221	A10
2222	B10
2224	B11
2225	B11
2230	C 9
2231	C10
2232	D11
2233	D11
2234	B14
2235	A16
2239	H22
2240	E10
2241	C13
2242	C14
2243	G11
2245	E11
2246	F12
2247	E14
2248	E14
2249	J14
2250	J14
2251	H10
2252	G16
2253	F14
2254	H10
2261	I 9
2262	I10
2263	J10
2264	D13
2265	E23
2266	G23
2267	G19
2271	F18
2272	G17
2273	F18
2274	G18
2281	F19
2282	G18
2283	F21
2284	G21
2285	E21
2286	G21
2287	F22
2288	G22
2289	E22
2290	G22
2291	F19
2292	F19
2293	H19
2295	H19
2296	G19
2297	F19
2298	G19
3201	F 1
3204	E 6
3211	F15
3212	F15
3214	G15
3215	G15
3216	H12
3217	H12
3231	A16
3241	D13
3242	E12
3243	E12
3244	E12
3245	E11
3246	F11
3247	F12
3248	E13
3249	E14
3250	F14
3251	F 9
3252	F10
3255	F13
3256	G13
3258	F15
3260	G15
3261	I10
3262	J11
3263	J11
3264	K12
3265	K 9
3266	K 9
3267	I13
3268	J13
3269	J13
3270	J13
3271	E21
3272	G21
3276	E19
3277	H18
3281	F17
3282	G17
3283	F17
3284	G17
3287	F18
3288	G18
3289	F18
3290	G18
3293	E21
3294	G21
3295	F22
3296	G22
3297	E22
3298	G22
3299	J13
5202	E 2
6220	A10
6231	C10
6232	C10
6233	C10
6234	C10
6235	B15
6241	E10
6242	E11
6243	F13
6244	F13
6245	E13
6247	J15
6248	J13
6251	F 9
6252	F10
6253	H10
6261	I 9
6262	J11
6263	K11
6265	J12
6271	H18
6272	I18
6273	D13
7231	A15
7232	A16
7233	B16
7241	C13
7242	D12
7243	G12
7244	F13
7245	G15
7246	G14
7247	I13
7248	H12
7261	I11
7291	E20
9201	E 2
9202	D 2
9205	D 1
9207	E 4
9208	E 4
9211	D 3
9212	E 3
9213	M 9
9214	M 9
9215	M 9
9216	M 9
9217	M 9
9244	D14
9269	I22
9281	F17
9282	G17


(NOT FOR VERSIONS -/37 & -/26)
TRANSFORMER
FOR VCD VERSION ONLY
FOR 18W & 12W LOGIC DECK ONLY
FOR 12W VERSION ONLY
7231 BD241BF
7232 BC558
7233 BC548
7241 BD437
7242 BD242BF
7243 TBC548B
7244 TBC558B
7245 TBC558B
7246 TBC548B
7247 BD241BF
7248 TBC548B
7261 BF423
7291 AN7164
D3SBA20
+12M
+5V6
+5V
+12V/+5V6
-30V
FTD
PA
VCD
AMP_ON
STDBY
RIPPLE
to pin 7 of 1223 7232
to pin 9 of 1224 3211
to pin 3 of 1237
TO 7233 3276
2 X 3 OHM
HEATSINK
* For provision only
Version Indication
T340 9213 T341
T342 9214 T343
T344 9215 T345
T346 9216 T347
T348 9217 T349
1222
STDBY 3,8V
F1 -27V
F2 -27V
-32V
PWD DN 8,3V

	/17	/01	/00	/10
3201	YES	-	-	-
5202	-	YES	YES	YES
1205	-	1EC 2A	-	-
1206	UL 6.3A	1EC 5A	1EC 5A	1EC 5A
1202	-	YES	-	-
9205	YES	-	YES	YES
9201	YES	-	-	-
9202	YES	-	-	-
9208	-	-	-	YES

Voltages are measured during CD play

DC at the pin of AN7164(18W) @230Vac

pin	1	2	3	4	5	6	7	8	9	10	11	12
(volts)	24	1.20	-	1.20	-	6.3	**13.2**	22.5	-	13.2	22.5	25.4

DC at the pin of AN7164(12W) @230Vac

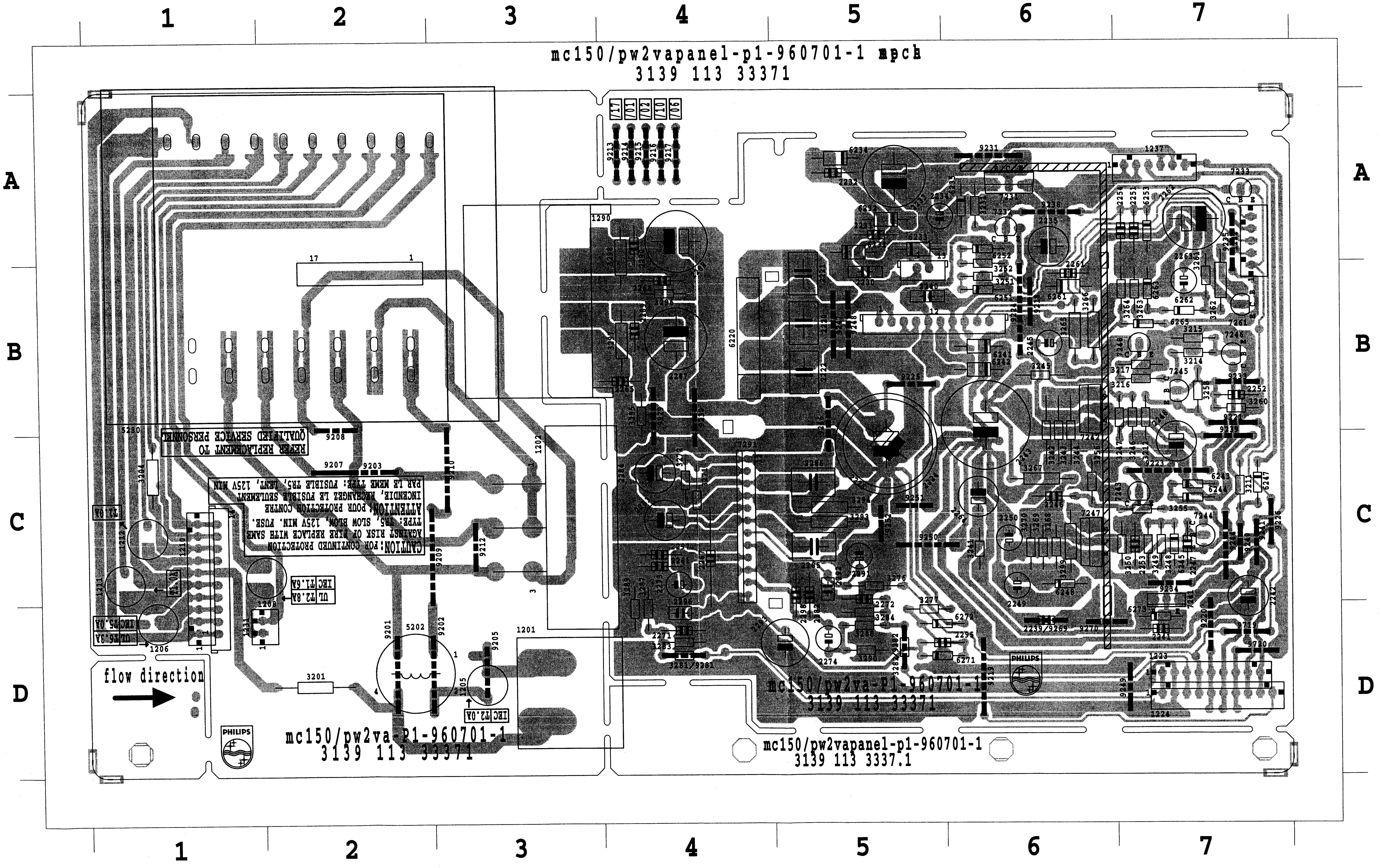
pin	1	2	3	4	5	6	7	8	9	10	11	12
(volts)	22.1	1.20	0	1.20	0	5	12.0	20.6	⊥	12.0	20.6	23.4

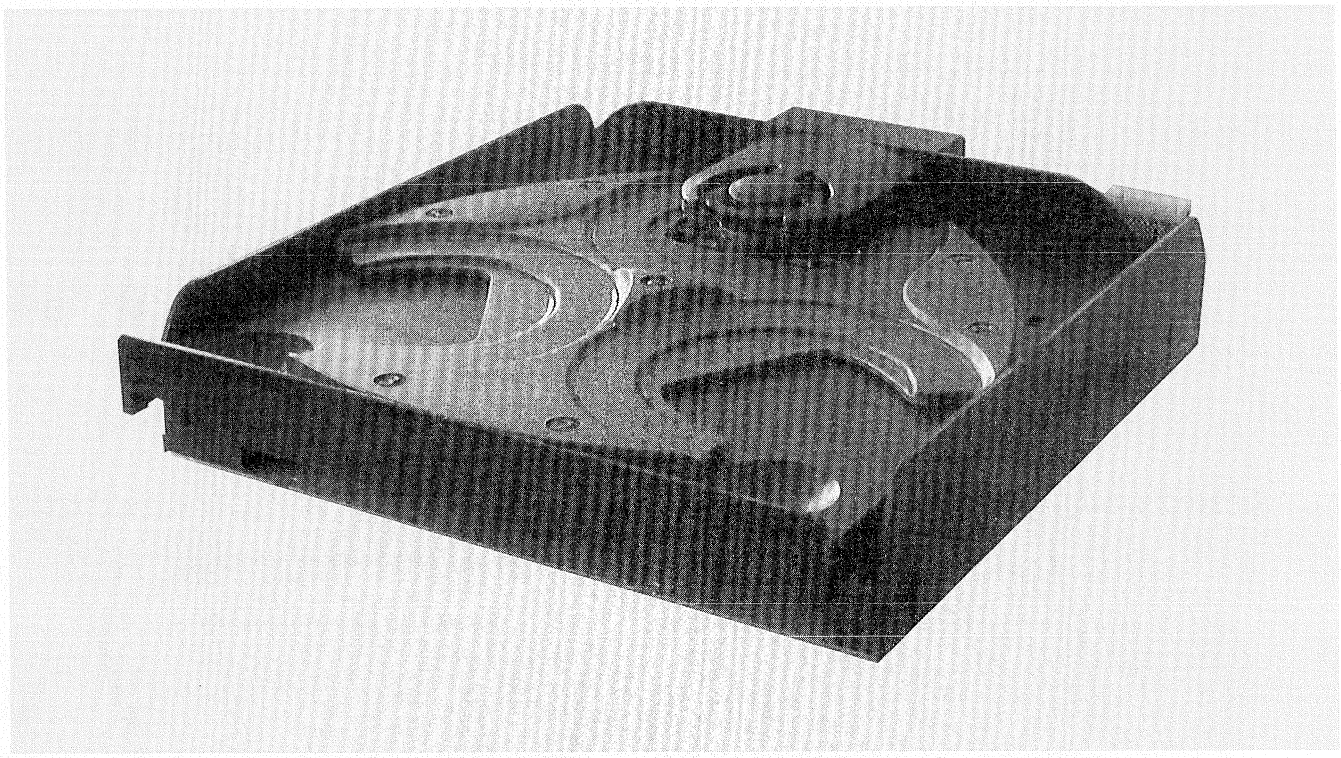
STD_BY / AMP_ON	H	Z	L
H	SET ON VCD OFF	SET ON VCD ON	
L			SET GOES STD_BY

# VALUES FOR 12W	
3281 / 3282	**2K2**
3283 / 3284	**1K5**
2271 / 2272	8N2
2248	220u
9244	**YES**

POWER 2VA COMPONENT LAYOUT

1205	D	3
1206	D	1
1208	C	2
1210	C	1
1211	C	1
1212	C	1
1222	A	7
2220	B	5
2221	B	5
2222	B	5
2224	C	5
2225	C	5
2230	B	5
2231	A	5
2240	B	5
2241	D	7
2242	C	7
2243	B	6
2245	B	6
2246	C	6
2247	C	7
2253	C	7
2254	A	7
2261	B	6
2262	A	7
2263	B	7
2264	C	6
2265	B	4
2274	D	5
2281	C	4
2282	C	5
2283	C	4
2284	C	4
2285	C	5
2286	C	5
2292	C	5
2293	D	5
2295	D	5
2296	D	4
2297	C	4
2298	C	5
3201	D	2
3216	B	7
3217	B	7
3231	A	6
3241	C	6
3242	B	6
3243	B	6
3244	B	6
3250	C	7
3251	B	6
3252	B	6
3255	C	7
3256	C	6
3258	B	7
3260	B	7
3266	B	6
3267	C	6
3268	C	6
3269	C	6
3270	C	6
3271	C	4
3272	C	4
3284	D	5
3287	D	4
3288	D	5
3289	D	4
3290	D	5
3293	C	5
3294	C	5
5202	D	2
5280	B	2
6220	B	4
6231	A	5
6232	A	5
6233	A	5
6234	A	5
6245	C	7
6247	C	7
6248	C	6
6251	B	6
6252	A	6
6253	A	7
6261	B	6
6273	D	7
7231	A	6
7232	A	6
7233	A	7
7241	C	7
7242	B	6
7243	C	7
7261	B	7
7291	C	4
9201	D	2
9202	D	2
9203	C	2
9205	D	3
9207	C	2
9214	A	4
9215	A	4
9216	A	4
9217	A	4
9218	B	6
9219	D	6
9220	D	7
9229	B	4
9230	B	4
9231	A	6
9233	B	7
9234	C	7
9235	A	7
9238	A	6
9247	B	5
9248	B	5
9249	D	7
9250	C	5
9251	C	5
9252	C	5
9269	D	6


1
2
3
4
5
6
7
A
B
C
D
mc150/pw2vapanel-p1-960701-1 mpch
3139 113 33371
REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE: TR5, SLOW BLOW, 125V MIN. FUSE.
ATTENTION: POUR PROTECTION CONTRE INCENDIE, REMPLACEZ LE FUSIBLE SEULEMENT PAR LE MEME TYPE: FUSIBLE TR5, LENT, 125V MIN
UL T2.8A
IEC T1.6A
IEC T2.0A
flow direction
PHILIPS
mc150/pw2va-P1-960701-1
3139 113 33371
mc150/pw2vapanel-p1-960701-1
3139 113 3337.1



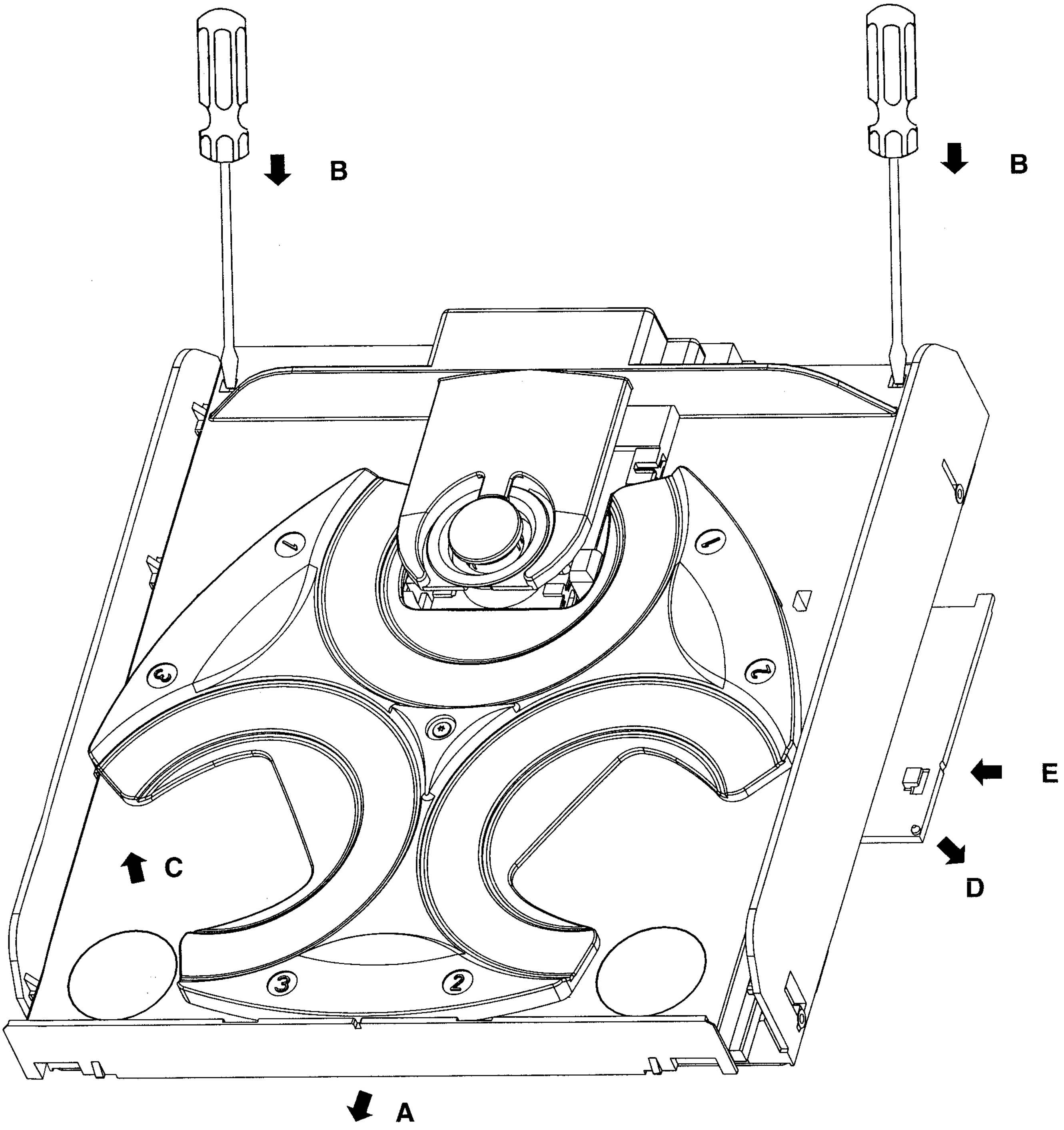
3CDC Module

(3 Disc Carrousel Changer)

TABLE OF CONTENTS

Demounting Hints 10-2
Servicing Hints...10-3
Lubrication Instructions..10-4
ESD Warnings 10-6
Blockdiagram..10-7
Wiring Diagram..10-8
Connector Board 10-9
Optical Out (not on all versions) 10-9
Component Layout Main Board...................................10-10
Circuit Diagram part1...10-11
Component Layout Main Board...................................10-12
Circuit Diagram part2...10-13
Exploded View...10-14
Mechanical Partslist...10-14
Electrical Partslist 10-15

Demounting Hints



Demounting of Drawer

- → **A** Pull drawer outwards
- → **B** Unlock drawer with screwdriver
- → **C** Lift drawer to demount from chassis

Demounting of Flex Plate

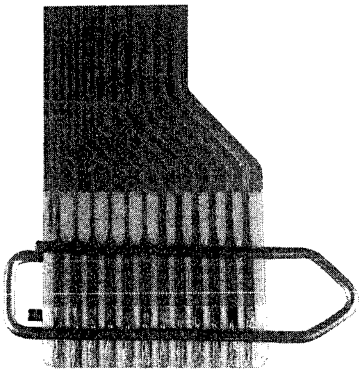
- → **D** Lift plate to unlock pin from bottom plate
- → **E** Move plate inwards to demount from bottom plate

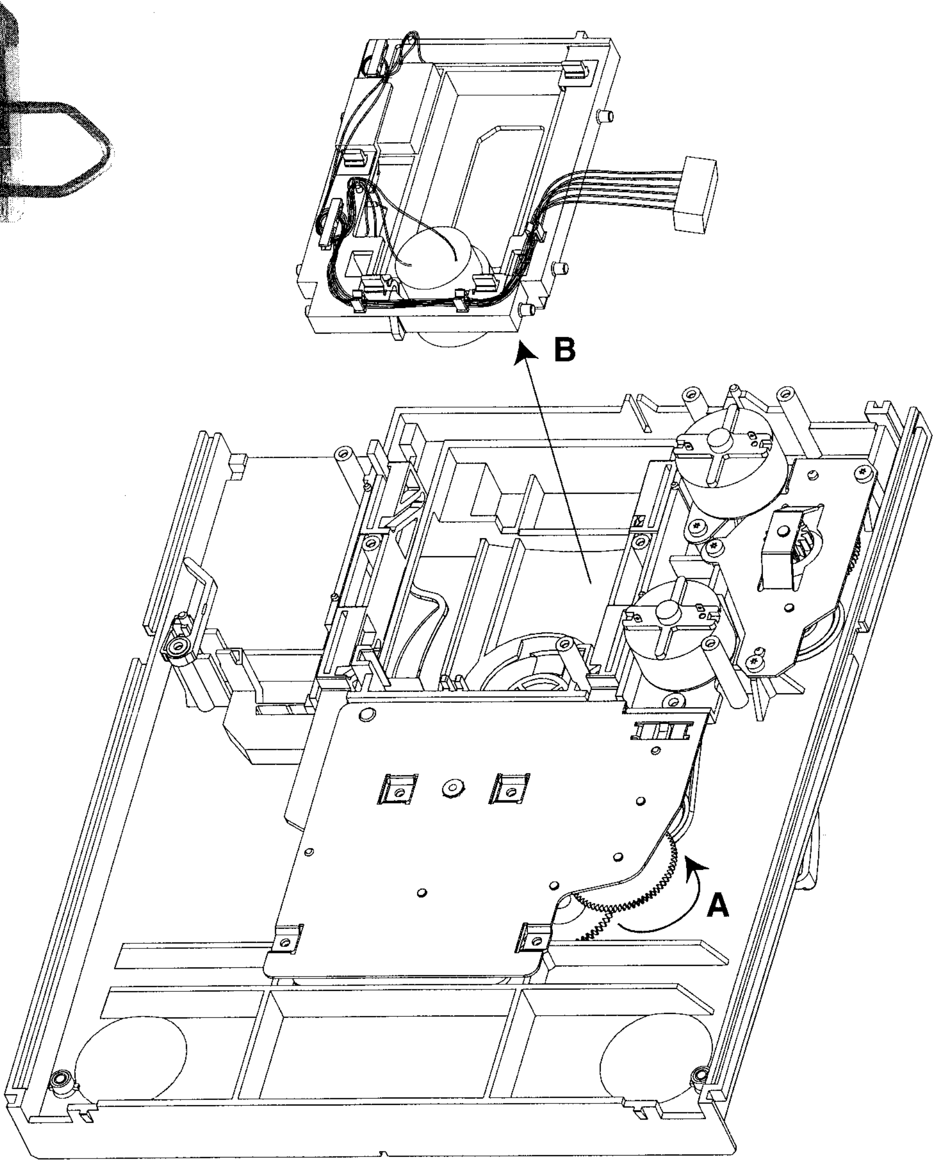
Servicing Hints

Replacement of CD Drive

See also exploded view of changer mechanism.

1. Demount flex plate (pos 140).
2. Demount printed circuit board: remove 6 screws and desolder lips of tray motor and carrousel motor.
3. Disconnect flexfoil and JST connector of CD drive from Printed circuit board. Shortcircuit the flexfoil with a paperclip to protect the laser against ESD.
4. Remove 2 screws (pos 107,108) and demount CD drive lockings (pos 105,106).
5. Turn gearwheel (pos 42) of disc change mechanism by finger to move CD drive support in upper position as shown in picture below Ⓐ.
6. Demount CD drive support (pos 95) Ⓑ.
7. Replace CD drive (pos 100). The wire tree of JST connector has to be desoldered and resoldered on the new CD drive again.


CD drive flex foil

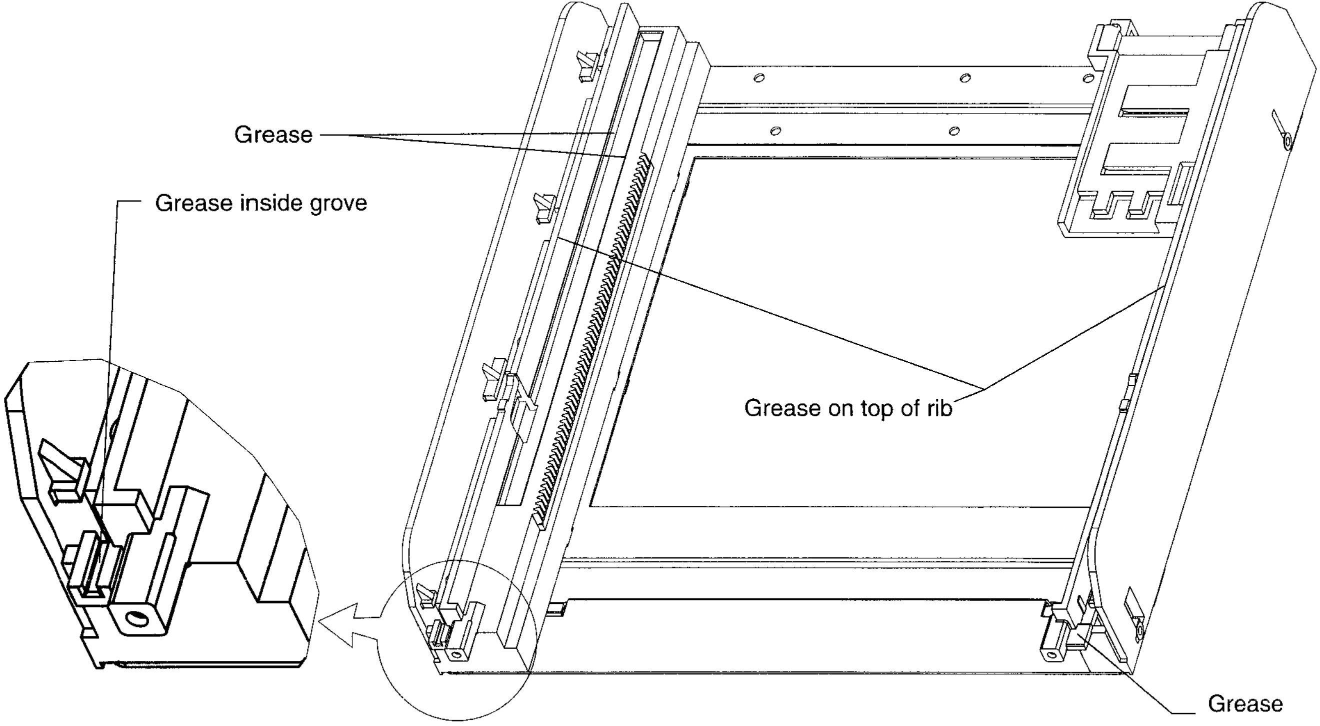


Mounting of Carrousel

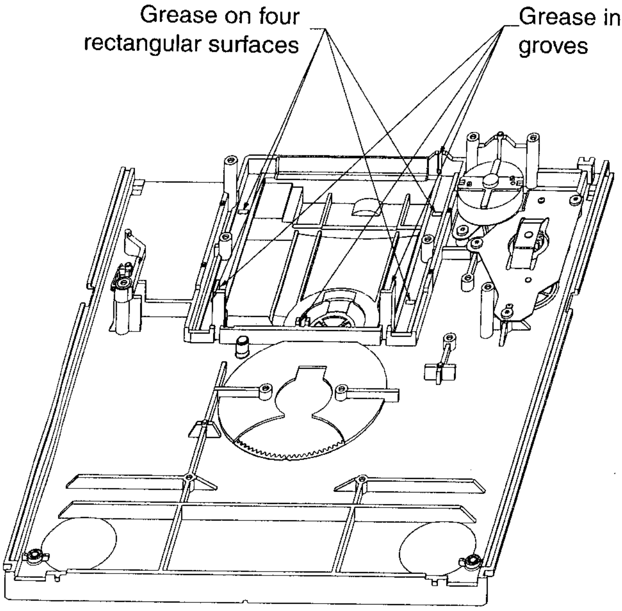
1. Turn gearwheel (pos 42) of disc change mechanism by finger until CD drive is in play position.
2. Mount carrousel (pos 115) so that disc is positioned right on turntable. Carrousel position number doesn´t matter.

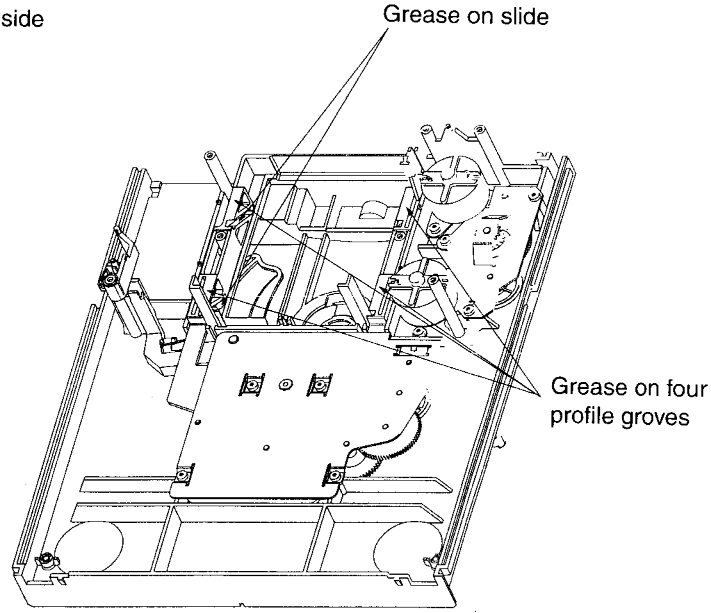
Lubrication Instructions

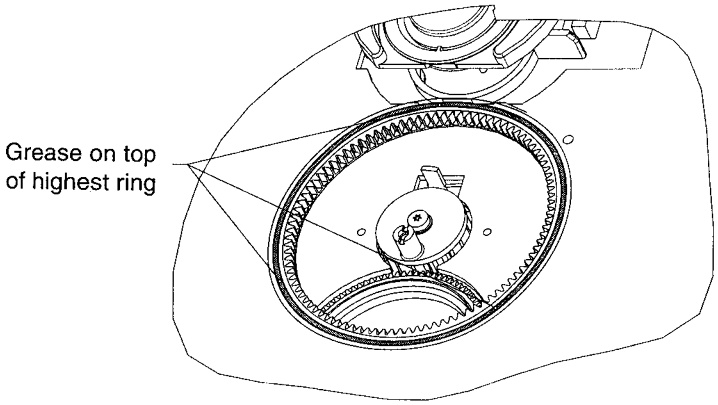
CHASSIS


Grease
Grease inside grove
Grease on top of rib
Grease

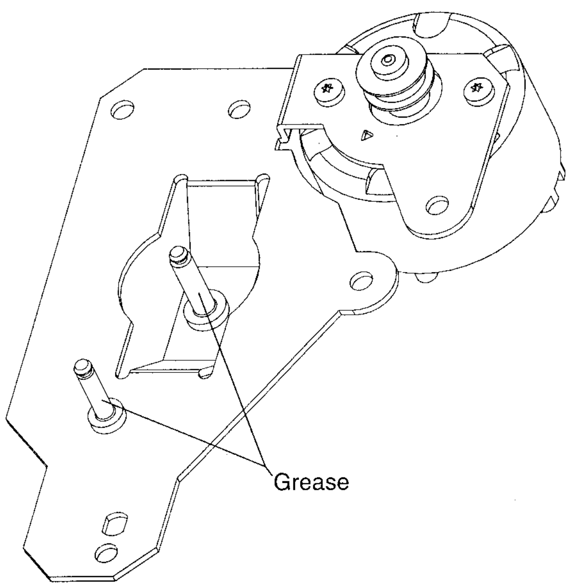
DRAWER


Grease on four rectangular surfaces
Grease inside groves

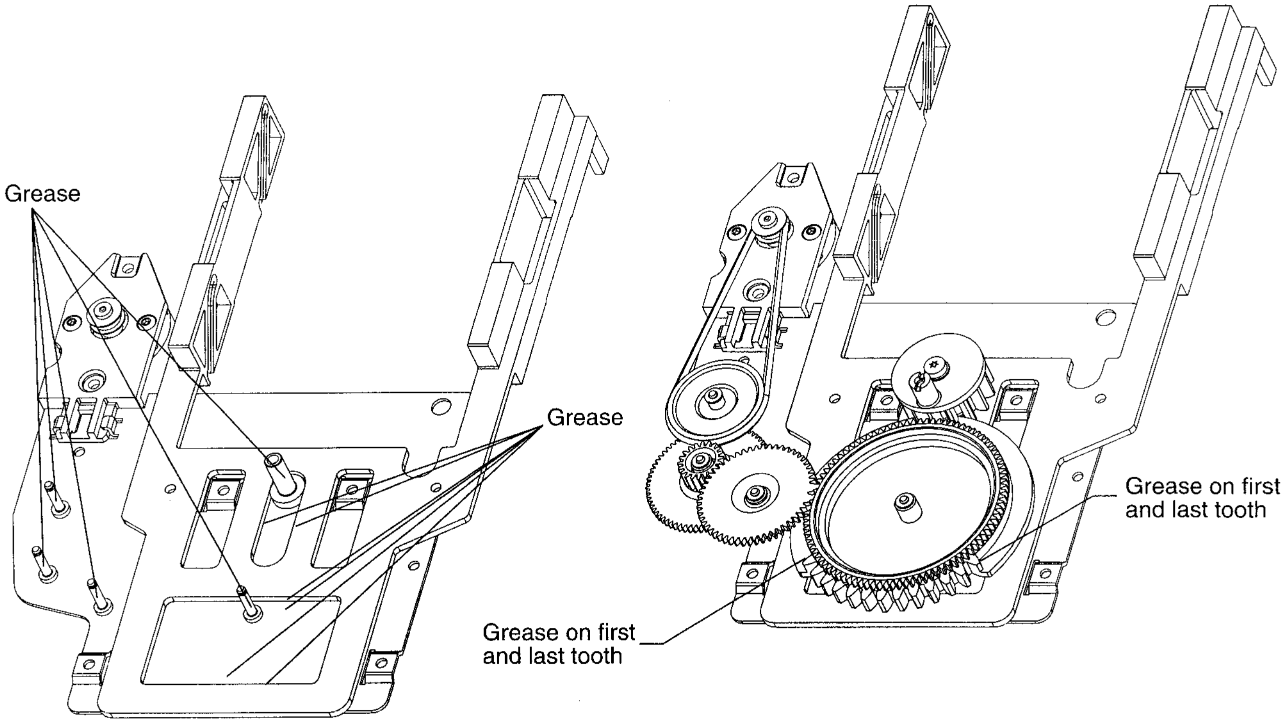

Grease on slide
Grease on four profile groves


Grease on top of highest ring

DRAWER MECHANISM



DISC CHANGE MECHANISM


Grease
Grease
Grease on first and last tooth
Grease on first and last tooth

Use only grease **Polylub GLY 801** service codenumber 4822 390 10136

WARNING

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE

- ***SWITCH OFF POWER SUPPLY***
- ***ESD PROTECTION***

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the CDM mechanism:

1. Disconnect old CD drive flexfoil from printed board
2. Connect paperclip to CD drive flexfoil to short-circuit flexfoil (fig.1)
3. Short-circuit printed board with **brass-sheet (4822 321 11197)** plugged into the flexfoil connector (fig.2)
4. Remove old CD drive mechanism
5. Position new CD mechanism in its studs
6. Remove short-circuit from printed board connector
7. Remove short-circuit from flexfoil of new CD drive
8. Connect new flexfoil to print connector (fig.3)

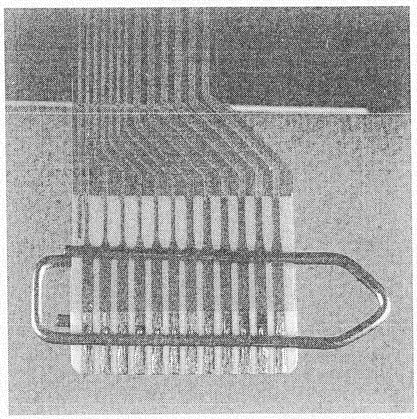


fig.1

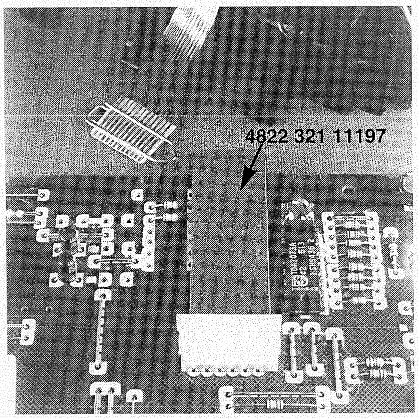


fig.2

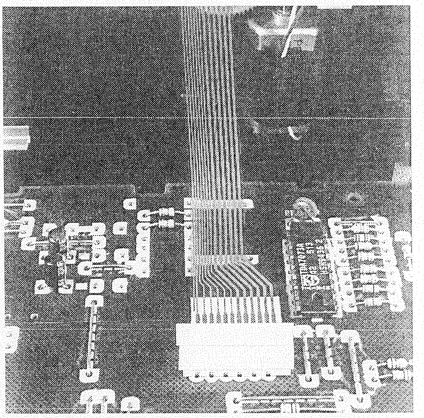
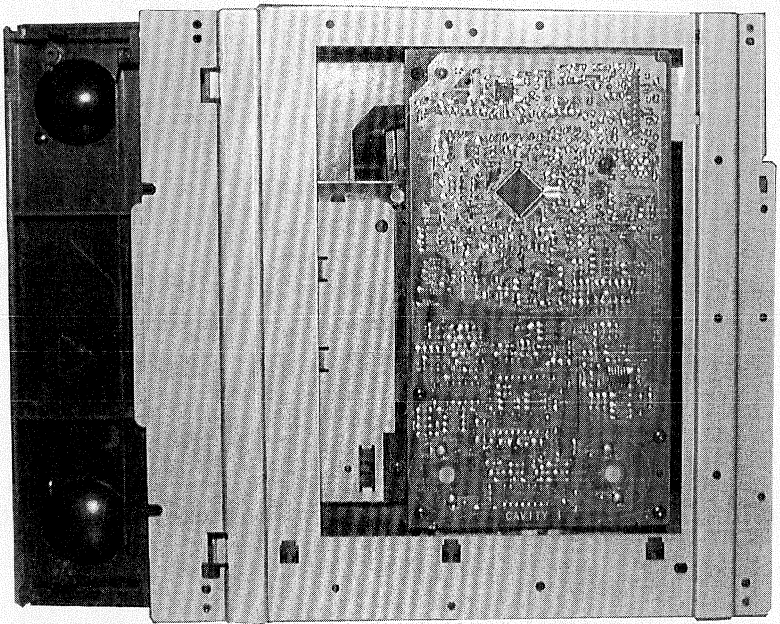
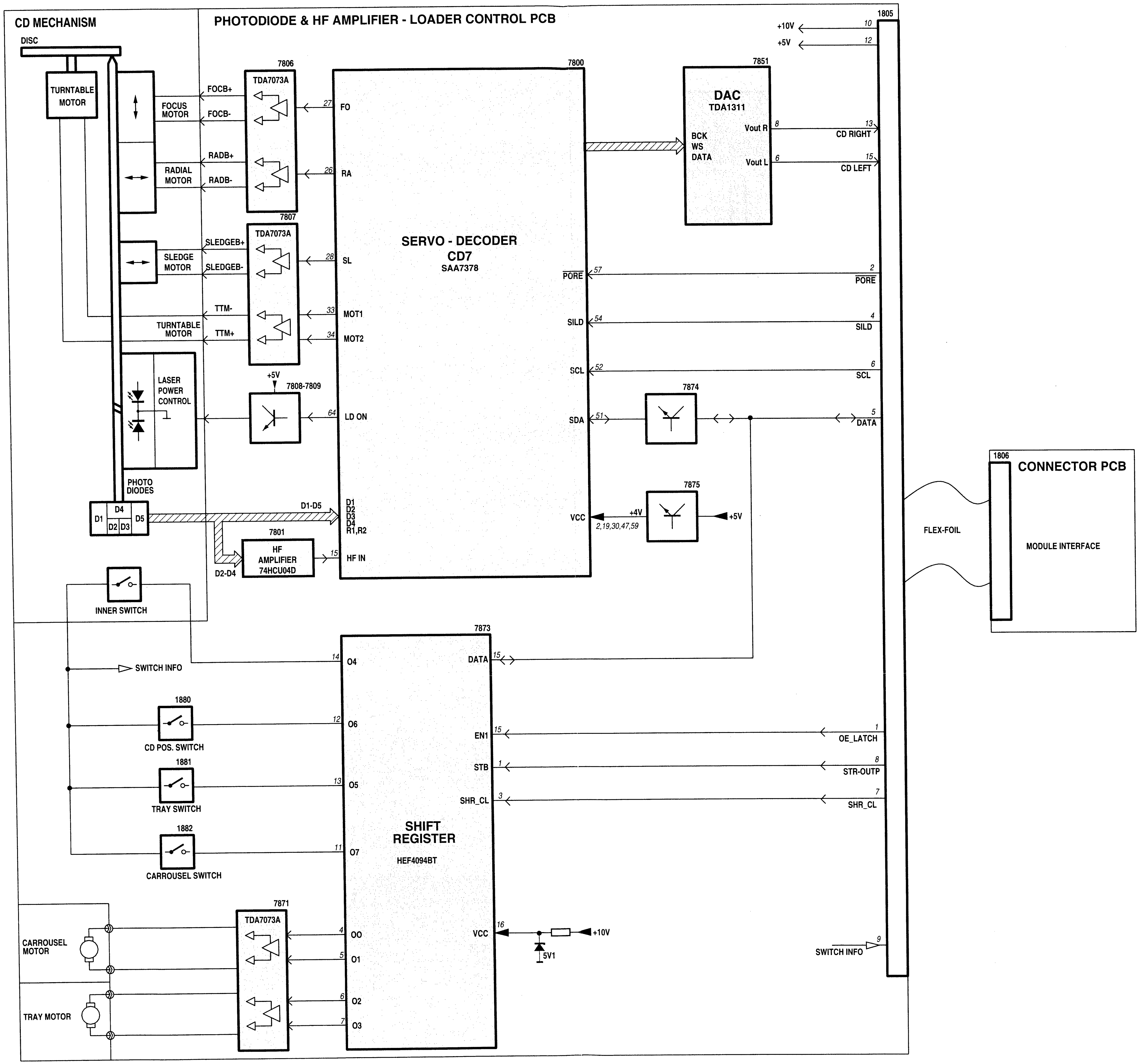


fig.3

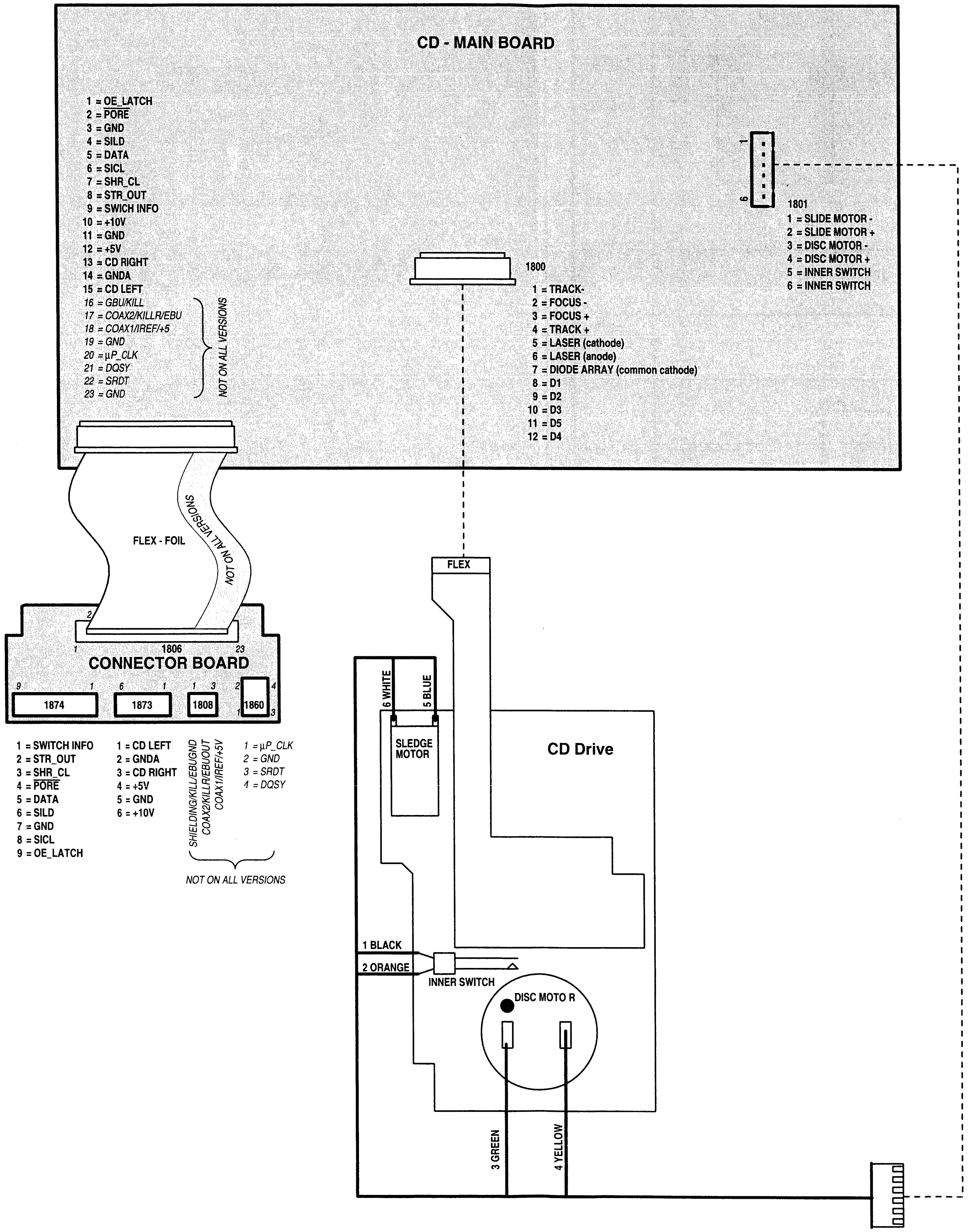
Service Position



Blockdiagram


CD MECHANISM
PHOTODIODE & HF AMPLIFIER - LOADER CONTROL PCB
DISC
TURNTABLE MOTOR
FOCUS MOTOR
FOCB+
FOCB-
RADIAL MOTOR
RADB+
RADB-
SLEDGE MOTOR
SLEDGEB+
SLEDGEB-
TURNTABLE MOTOR
TTM-
TTM+
LASER POWER CONTROL
PHOTO DIODES
D1 D2 D3 D4 D5
D1-D5
D2-D4
7806
TDA7073A
7807
TDA7073A
+5V
7808-7809
7801
HF AMPLIFIER 74HCU04D
7800
SERVO - DECODER
CD7
SAA7378
FO
RA
SL
MOT1
MOT2
LD ON
D1 D2 D3 D4 R1,R2
HF IN
PORE
SILD
SCL
SDA
VCC
+4V
2,19,30,47,59
7851
DAC
TDA1311
BCK
WS
DATA
Vout R
Vout L
7874
7875
+5V
1805
+10V
+5V
CD RIGHT
CD LEFT
PORE
SILD
SCL
DATA
OE_LATCH
STR-OUTP
SHR_CL
SWITCH INFO
INNER SWITCH
SWITCH INFO
1880
CD POS. SWITCH
1881
TRAY SWITCH
1882
CARROUSEL SWITCH
7873
SHIFT REGISTER
HEF4094BT
O4
O6
O5
O7
DATA
EN1
STB
SHR_CL
VCC
5V1
+10V
7871
TDA7073A
O0
O1
O2
O3
CARROUSEL MOTOR
TRAY MOTOR
1806
CONNECTOR PCB
MODULE INTERFACE
FLEX-FOIL

Wiring diagram


CD - MAIN BOARD
1 = OE_LATCH
2 = PORE
3 = GND
4 = SILD
5 = DATA
6 = SICL
7 = SHR_CL
8 = STR_OUT
9 = SWICH INFO
10 = +10V
11 = GND
12 = +5V
13 = CD RIGHT
14 = GNDA
15 = CD LEFT
16 = GBU/KILL
17 = COAX2/KILLR/EBU
18 = COAX1/IREF/+5
19 = GND
20 = µP_CLK
21 = DQSY
22 = SRDT
23 = GND
NOT ON ALL VERSIONS
1800
1 = TRACK-
2 = FOCUS -
3 = FOCUS +
4 = TRACK +
5 = LASER (cathode)
6 = LASER (anode)
7 = DIODE ARRAY (common cathode)
8 = D1
9 = D2
10 = D3
11 = D5
12 = D4
1
6
1801
1 = SLIDE MOTOR -
2 = SLIDE MOTOR +
3 = DISC MOTOR -
4 = DISC MOTOR +
5 = INNER SWITCH
6 = INNER SWITCH
FLEX - FOIL
NOT ON ALL VERSIONS
2
1
1806
23
CONNECTOR BOARD
9
1
6
1
1
3
2
4
1874
1873
1808
1860
1
3
1 = SWITCH INFO
2 = STR_OUT
3 = SHR_CL
4 = PORE
5 = DATA
6 = SILD
7 = GND
8 = SICL
9 = OE_LATCH
1 = CD LEFT
2 = GNDA
3 = CD RIGHT
4 = +5V
5 = GND
6 = +10V
SHIELDING/KILL/EBUGND
COAX2/KILLR/EBUOUT
COAX1/IREF/+5V
1 = µP_CLK
2 = GND
3 = SRDT
4 = DQSY
NOT ON ALL VERSIONS
FLEX
6 WHITE
5 BLUE
SLEDGE MOTOR
CD Drive
1 BLACK
2 ORANGE
INNER SWITCH
DISC MOTO R
3 GREEN
4 YELLOW

Remarks

AF2 CIRCUIT

1501	D 2
1502	H 1
1505	I 8
1507	I 6
1508	E21
1510	J 2
1511	G21
1512	A 3
1513	K 1
1515	I15
1516	E21
2501	A 8
2502	G 8
2503	B 8
2504	F 8
2505	B 8
2506	F 8
2507	A 9
2508	G 9
2511	A 9
2512	G 9
2513	B10
2514	F10
2515	D16
2517	A 9
2518	G 9
2521	H 4
2522	H 5
2523	E13
2524	E12
2525	A 7
2526	G 7
2527	C17
2528	E17
2529	D18
2531	C17
2532	E17
2533	C13
2534	F13
2535	A14
2536	E14
2537	C15
2538	F15
2539	C13
2540	F13
2541	C17
2542	E17
2543	C19
2544	F19
2545	J 7
2546	J 7
2547	D21
2548	D21
2549	C 3
2550	C 3
2551	D15
2552	G15
2553	G19
2554	G19
2555	F19
2556	F19
2557	D20
2558	D20
2559	F 7
2573	I 7
2574	J 7
2575	C20
2577	B14
2579	C14
2580	F 6
2581	B 7
2582	F 7
2583	G10
2584	G11
2585	H 4
2587	B 4
2588	F 4
2589	J 6
2591	B13
2592	E13
2593	C15
2594	F15
2595	A 7
2596	G 7
2601	B 6
2602	F 5
2603	G18
2609	D19
2610	E19
2611	B18
2612	F18
2613	M 4
2614	M 4
2615	C16
2616	F16
2617	B15
2618	E15
2619	G10
2620	E18
2621	A 4
2622	F 7
3501	B 3
3502	E 3
3503	C 3
3504	E 4
3505	C 4
3506	E 4
3507	A 7
3508	G 7
3509	A 7
3510	G 7
3511	A 8
3512	G 8
3513	A 9
3514	G 9
3515	A 9
3516	H 9
3517	A 9
3518	H 9
3519	C16
3520	F16
3521	A 5
3522	G 8
3523	I 4
3524	I 5
3525	J 4
3526	J 5
3527	B 8
3528	G 8
3529	F18
3530	F18
3531	B13
3532	E13
3533	B13
3534	E13
3535	C13
3536	F13
3537	B14
3538	E14
3539	B15
3540	E15
3541	C14
3542	F14
3543	C14
3544	F14
3545	A20
3546	A20
3547	B20
3548	B21
3549	D15
3550	G15
3551	B15
3552	E15
3553	C16
3554	F16
3555	B16
3556	G16
3557	B17
3558	F17
3559	B 5
3560	G 5
3561	C17
3562	E17
3563	B18
3564	F18
3565	C18
3566	F18
3567	C19
3568	F19
3569	D19
3570	E19
3571	J 7
3572	J 7
3573	A11
3574	F10
3575	A19
3576	I14
3577	B12
3578	F12
3580	G10
3581	G10
3582	G11
3583	G12
3584	B19
3585	C20
3586	C21
3587	J 3
3588	J 3
3589	H 4
3591	L 4
3592	M 4
3593	I 7
3594	J 7
3595	C21
3596	C20
3597	L 4
3598	M 4
3599	L 4
3600	M 4
3601	A 4
3602	B 3
3611	D16
3612	D16
3631	G20
3632	G20
3635	D18
4501	A 8
4506	J12
4516	G 2
4527	J12
4529	A19
4541	A 6
4542	G 6
4543	B 6
4544	F 6
4545	A 7
4546	H 7
4547	A 8
4548	H 8
4574	J12
4576	L 4
4577	M 4
4581	K17
4582	L17
4583	L17
4584	L17
4585	L17
4586	L17
4587	M17
4588	M17
4589	M17
4590	M17
4591	M17
4592	M17
51	
52	
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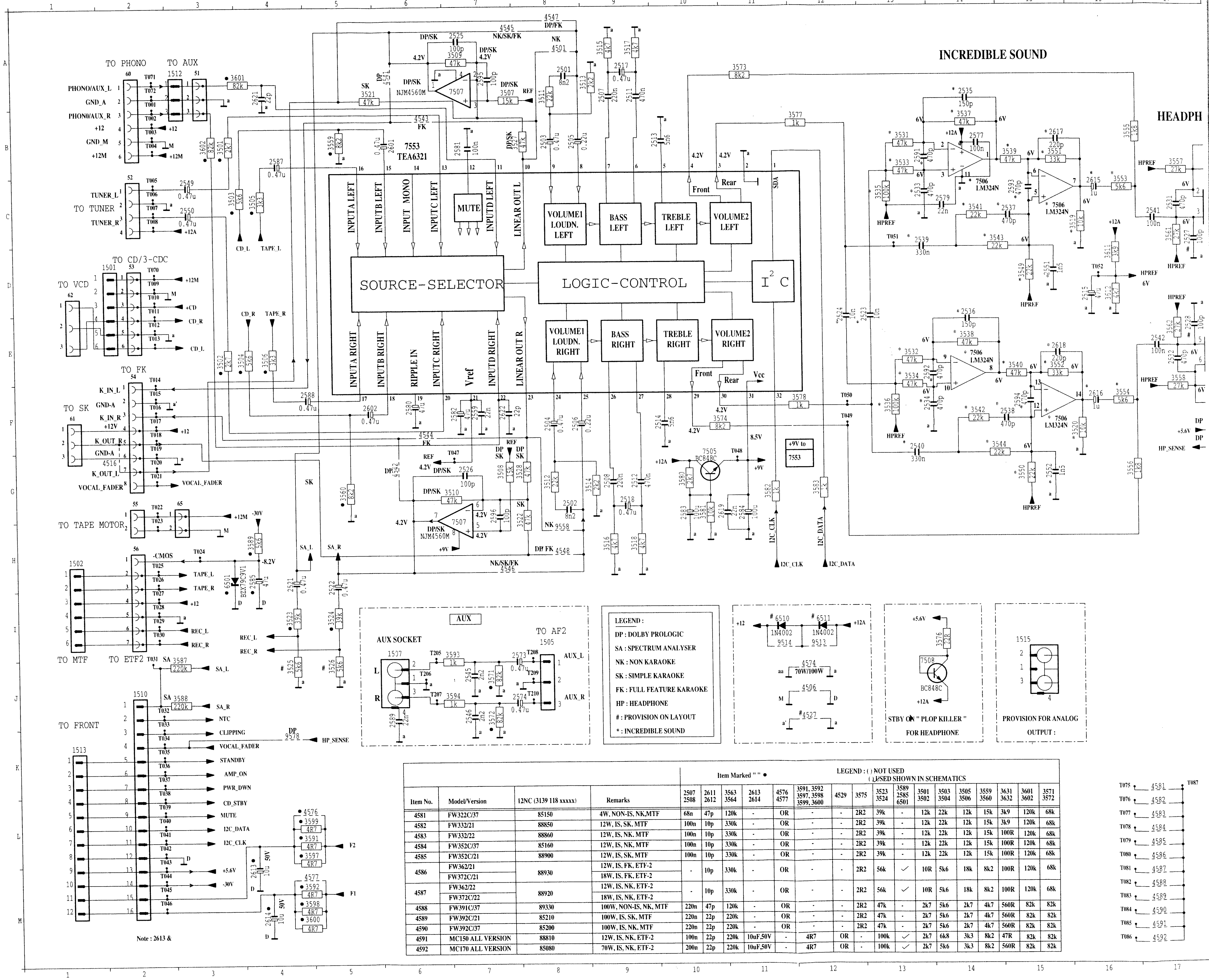
55	


1
2
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9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
K
L
M
TO PHONO
TO AUX
PHONO/AUX_L
GND_A
PHONO/AUX_R
+12
GND_M
+12M
TO TUNER
TUNER_L
TUNER_R
+12A
TO CD/3-CDC
TO VCD
CD_R
CD_L
+CD
TO SK
TO FK
K_IN_L
GND-A
K_IN_R
+12V
K_OUT_R
K_OUT_L
VOCAL_FADER
TO TAPE MOTOR
TO MTF
TO ETF2
-CMOS
TAPE_L
TAPE_R
REC_L
REC_R
SA_L
SA_R
TO FRONT
NTC
CLIPPING
STANDBY
AMP_ON
PWR_DWN
CD_STBY
MUTE
I2C_DATA
I2C_CLK
+5.6V
-30V
HP_SENSE
F2
F1
Note : 2613 &
7553
TEA6321
INPUTA LEFT
INPUTB LEFT
INPUT MONO
INPUTC LEFT
MUTE
INPUTD LEFT
LINEAR OUT L
SOURCE-SELECTOR
LOGIC-CONTROL
I2C
VOLUME1 LOUDN. LEFT
BASS LEFT
TREBLE LEFT
VOLUME2 LEFT
VOLUME1 LOUDN. RIGHT
BASS RIGHT
TREBLE RIGHT
VOLUME2 RIGHT
INPUTA RIGHT
INPUTB RIGHT
RIPPLE IN
INPUTC RIGHT
Vref
INPUTD RIGHT
LINEAR OUT R
Front
Rear
SDA
Vcc
7507
NJM4560M
DP/SK
NK/SK/FK
DP/FK
NK
REF
4.2V
8.5V
+9V
+9V to 7553
7505
BC848C
INCREDIBLE SOUND
7506
LM324N
6V
HPREF
HEADPH
AUX
AUX SOCKET
TO AF2
AUX_L
AUX_R
L
R
6510
6511
1N4002
70W/100W
7508
BC848C
STBY ON " PLOP KILLER " FOR HEADPHONE
PROVISION FOR ANALOG OUTPUT :
T075
T076
T077
T078
T079
T080
T081
T082
T083
T084
T085
T086
T087
4581
4582
4583
4584
4585
4586
4587
4588
4589
4590
4591
4592

LEGEND :

DP : DOLBY PROLOGIC

SA : SPECTRUM ANALYSER

NK : NON KARAOKE

SK : SIMPLE KARAOKE

FK : FULL FEATURE KARAOKE

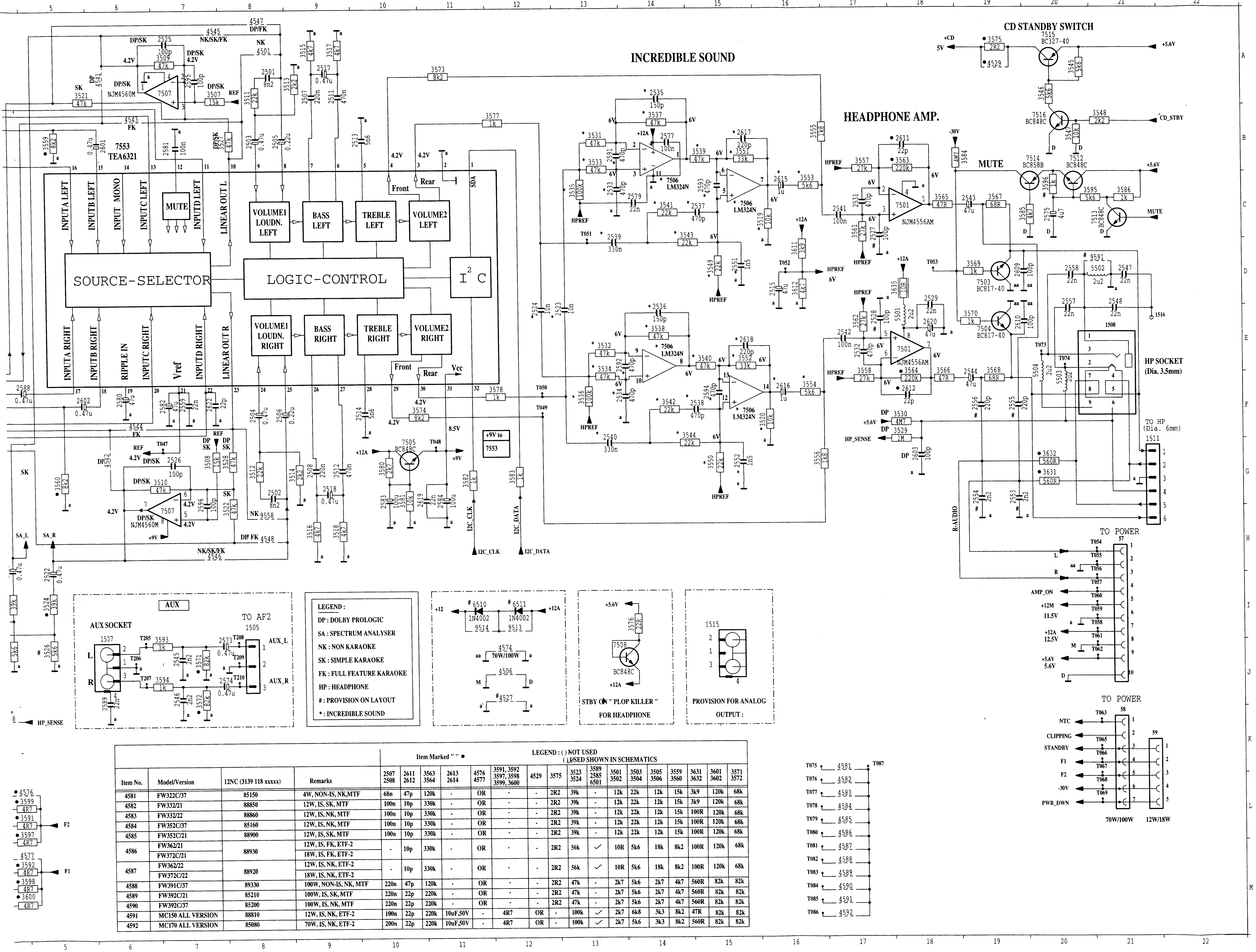
HP : HEADPHONE

: PROVISION ON LAYOUT

* : INCREDIBLE SOUND

				Item Marked " " ●					LEGEND : ( ) NOT USED ( ) USED SHOWN IN SCHEMATICS											
Item No.	Model/Version	12NC (3139 118 xxxxx)	Remarks	2507 2508	2611 2612	3563 3564	2613 2614	4576 4577	3591, 3592 3597, 3598 3599, 3600	4529	3575	3523 3524	3589 2585 6501	3501 3502	3503 3504	3505 3506	3559 3560	3631 3632	3601 3602	3571 3572
4581	FW322C/37	85150	4W, NON-IS, NK,MTF	68n	47p	120k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	3k9	120k	68k
4582	FW332/21	88850	12W, IS, SK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	3k9	120k	68k
4583	FW332/22	88860	12W, IS, NK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k
4584	FW352C/37	85160	12W, IS, NK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k
4585	FW352C/21	88900	12W, IS, SK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k
4586	FW362/21 FW372C/21	88930	12W, IS, FK, ETF-2 18W, IS, FK, ETF-2	-	10p	330k	-	OR	-	-	2R2	56k	✓	10R	5k6	18k	8k2	100R	120k	68k
4587	FW362/22 FW372C/22	88920	12W, IS, NK, ETF-2 18W, IS, NK, ETF-2	-	10p	330k	-	OR	-	-	2R2	56k	✓	10R	5k6	18k	8k2	100R	120k	68k
4588	FW391C/37	89330	100W, NON-IS, NK, MTF	220n	47p	120k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k
4589	FW392C/21	85210	100W, IS, SK, MTF	220n	22p	220k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k
4590	FW392C/37	85200	100W, IS, NK, MTF	220n	22p	220k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k
4591	MC150 ALL VERSION	88810	12W, IS, NK, ETF-2	100n	22p	220k	10uF,50V	-	4R7	OR	-	100k	✓	2k7	6k8	3k3	8k2	47R	82k	82k
4592	MC170 ALL VERSION	85080	70W, IS, NK, ETF-2	200n	22p	220k	10uF,50V	-	4R7	OR	-	100k	✓	2k7	5k6	3k3	8k2	560R	82k	82k

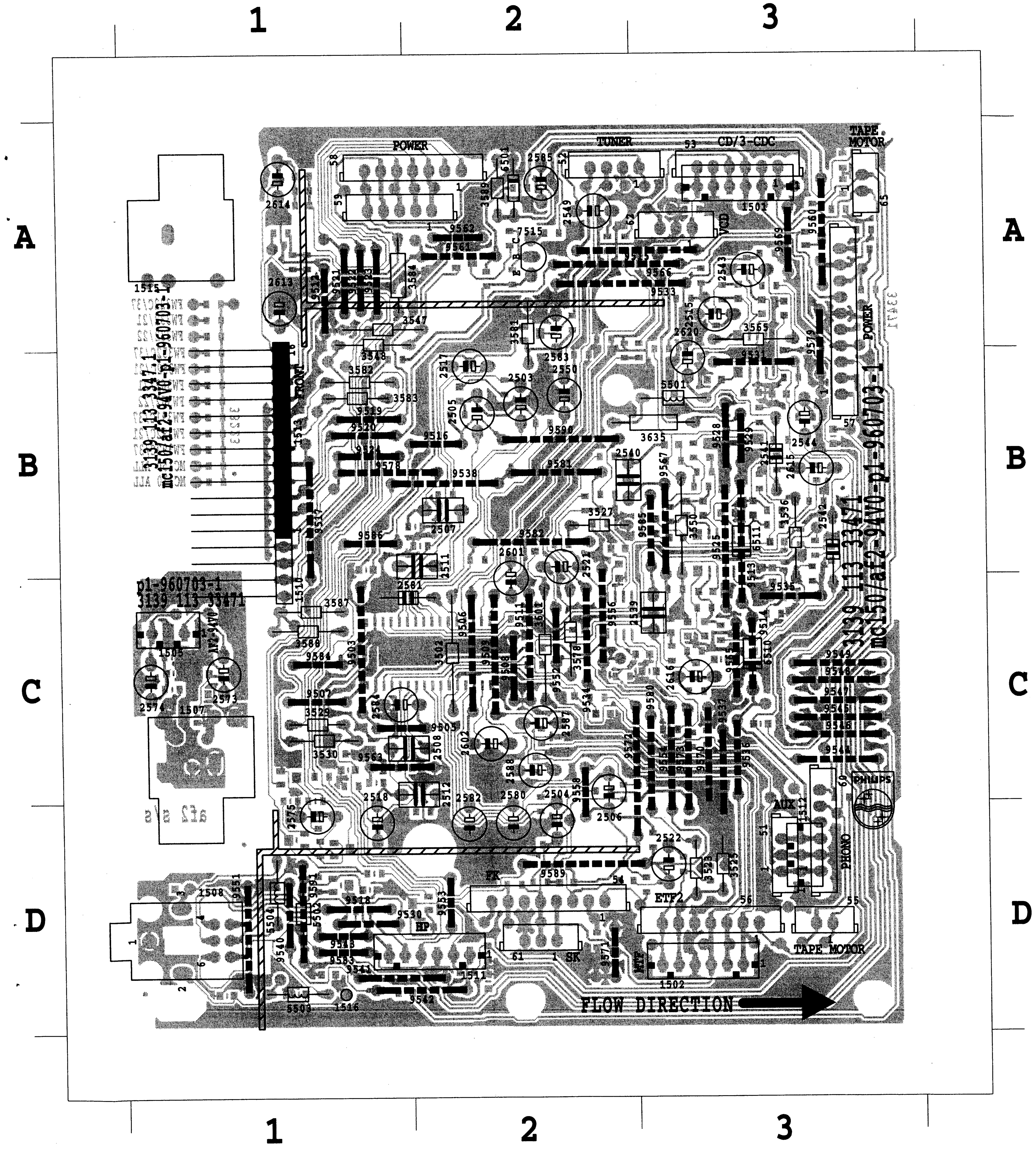
550	C 3
551	D15
552	G15
553	G19
554	G19
555	F19
556	F19
557	D20
558	D20
2559	F 7
2573	I 7
2574	J 7
2575	C20
2577	B14
2579	C14
2580	F 6
2581	B 7
2582	F 7
2583	G10
2584	G11
2585	H 4
2587	B 4
2588	F 4
2589	J 6
2591	B13
2592	E13
2593	C15
2594	F15
2595	A 7
2596	G 7
2601	B 6
2602	F 5
2603	G18
2609	D19
2610	E19
2611	B18
2612	F18
2613	M 4
2614	M 4
2615	C16
2616	F16
2617	B15
2618	E15
2619	G10
2620	E18
2621	A 4
2622	F 7
3501	B 3
3502	E 3
3503	C 3
3504	E 4
3505	C 4
3506	E 4
3507	A 7
3508	G 7
3509	A 7
3510	G 7
3511	A 8
3512	G 8
3513	A 9
3514	G 9
3515	A 9
3516	H 9
3517	A 9
3518	H 9
3519	C16
3520	F16
3521	A 5
3522	G 8
3523	I 4
3524	I 5
3525	J 4
3526	J 5
3527	B 8
3528	G 8
3529	F18
3530	F18
3531	B13
3532	E13
3533	B13
3534	E13
3535	C13
3536	F13
3537	B14
3538	E14
3539	B15
3540	E15
3541	C14
3542	F14
3543	C14
3544	F14
3545	A20
3546	A20
3547	B20
3548	B21
3549	D15
3550	G15
3551	B15
3552	E15
3553	C16
3554	F16
3555	B16
3556	G16
3557	B17
3558	F17
3559	B 5
3560	G 5
3561	C17
3562	E17
3563	B18
3564	F18
3565	C18
3566	F18
3567	C19
3568	F19
3569	D19
3570	E19
3571	J 7
3572	J 7
3573	A11
3574	F10
3575	A19
3576	I14
3577	B12
3578	F12
3580	G10
3581	G10
3582	G11
3583	G12
3584	B19
3585	C20
3586	C21
3587	J 3
3588	J 3
3589	H 4
3591	L 4
3592	M 4
3593	I 7
3594	J 7
3595	C21
3596	C20
3597	L 4
3598	M 4
3599	L 4
3600	M 4
3601	A 4
3602	B 3
3611	D16
3612	D16
3631	G20
3632	G20
3635	D18
4501	A 8
4506	J12
4516	G 2
4527	J12
4529	A19
4541	A 6
4542	G 6
4543	B 6
4544	F 6
4545	A 7
4546	H 7
4547	A 8
4548	H 8
4574	J12
4576	L 4
4577	M 4
4581	K17
4582	L17
4583	L17
4584	L17
4585	L17
4586	L17
4587	M17
4588	M17
4589	M17
4590	M17
4591	M17
4592	M17
51	A 3
52	B 2
53	D 2
54	E 2
55	G 2
5501	E18
5502	D21
5503	F20
5504	E20
56	H 2
57	H21
58	K21
59	K21
60	A 2
61	F 1
62	D 1
65	G 3
6501	H 3
6510	I11
6511	I12
7501	C18
7501	E18
7503	D19
7504	E19
7505	G10
7506	C14
7506	C15
7506	E14
7506	F15
7507	A 7
7507	H 7
7508	J14
7512	B20
7513	C21
7514	B20
7515	A20
7516	B20
7553	B 6
9513	I12
9514	I11
9558	H 8
9578	K 4
9591	D21


INCREDIBLE SOUND
HEADPHONE AMP.
CD STANDBY SWITCH
MUTE
7553
TEA6321
INPUTA LEFT
INPUTB LEFT
INPUT MONO
INPUTC LEFT
MUTE
INPUTD LEFT
LINEAR OUT L
VOLUME1 LOUDN. LEFT
BASS LEFT
TREBLE LEFT
VOLUME2 LEFT
SOURCE-SELECTOR
LOGIC-CONTROL
I2C
INPUTA RIGHT
INPUTB RIGHT
RIPPLE IN
INPUTC RIGHT
Vref
INPUTD RIGHT
LINEAR OUT R
VOLUME1 LOUDN. RIGHT
BASS RIGHT
TREBLE RIGHT
VOLUME2 RIGHT
Front
Rear
SDA
Vcc
7507
NJM4560M
7506
LM324N
7501
NJM4556AM
7515
BC327-40
7516
BC848C
7514
BC858B
7512
BC848C
7513
BC848C
7503
BC817-40
7504
BC817-40
7505
BC848C
+5.6V
5V
+CD
CD_STBY
HPREF
HP SOCKET
(Dia. 3.5mm)
TO HP
(Dia. 6mm)
1508
1511
TO POWER
T054
L
R
AMP_ON
+12M
11.5V
+12A
12.5V
+5.6V
5.6V
NTC
CLIPPING
STANDBY
F1
F2
-30V
PWR_DWN
70W/100W
12W/18W
HP_SENSE
R.AUDIO
I2C_CLK
I2C_DATA
SA_L
SA_R
SK
DP/SK
NK/SK/FK
DP/FK
+9V to
7553
AUX
AUX SOCKET
1507
TO AF2
1505
AUX_L
AUX_R
LEGEND :
DP : DOLBY PROLOGIC
SA : SPECTRUM ANALYSER
NK : NON KARAOKE
SK : SIMPLE KARAOKE
FK : FULL FEATURE KARAOKE
HP : HEADPHONE
# : PROVISION ON LAYOUT
* : INCREDIBLE SOUND
1N4002
6510
6511
4574
70W/100W
4506
4527
7508
BC848C
STBY ON " PLOP KILLER "
FOR HEADPHONE
1515
PROVISION FOR ANALOG
OUTPUT :
F2
F1
T075
T087
4581
4592

				Item Marked " " ●				LEGEND : ( ) NOT USED (✓) USED SHOWN IN SCHEMATICS										
Item No.	Model/Version	12NC (3139 118 xxxxx)	Remarks	2507 2508	2611 2612	3563 3564	2613 2614	4576 4577	3591, 3592 3597, 3598 3599, 3600	4529	3575	3523 3524	3589 2585 6501	3501 3502	3503 3504	3505 3506	3559 3560	3631 3632	3601 3602	3571 3572
4581	FW322C/37	85150	4W, NON-IS, NK,MTF	68n	47p	120k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	3k9	120k	68k
4582	FW332/21	88850	12W, IS, SK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	3k9	120k	68k
4583	FW332/22	88860	12W, IS, NK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k
4584	FW352C/37	85160	12W, IS, NK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k
4585	FW352C/21	88900	12W, IS, SK, MTF	100n	10p	330k	-	OR	-	-	2R2	39k	-	12k	22k	12k	15k	100R	120k	68k
4586	FW362/21	88930	12W, IS, FK, ETF-2	-	10p	330k	-	OR	-	-	2R2	56k	✓	10R	5k6	18k	8k2	100R	120k	68k
	FW372C/21		18W, IS, FK, ETF-2																	
4587	FW362/22	88920	12W, IS, NK, ETF-2	-	10p	330k	-	OR	-	-	2R2	56k	✓	10R	5k6	18k	8k2	100R	120k	68k
	FW372C/22		18W, IS, NK, ETF-2																	
4588	FW391C/37	89330	100W, NON-IS, NK, MTF	220n	47p	120k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k
4589	FW392C/21	85210	100W, IS, SK, MTF	220n	22p	220k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k
4590	FW392C/37	85200	100W, IS, NK, MTF	220n	22p	220k	-	OR	-	-	2R2	47k	-	2k7	5k6	2k7	4k7	560R	82k	82k
4591	MC150 ALL VERSION	88810	12W, IS, NK, ETF-2	100n	22p	220k	10uF,50V	-	4R7	OR	-	100k	✓	2k7	6k8	3k3	8k2	47R	82k	82k
4592	MC170 ALL VERSION	85080	70W, IS, NK, ETF-2	200n	22p	220k	10uF,50V	-	4R7	OR	-	100k	✓	2k7	5k6	3k3	8k2	560R	82k	82k

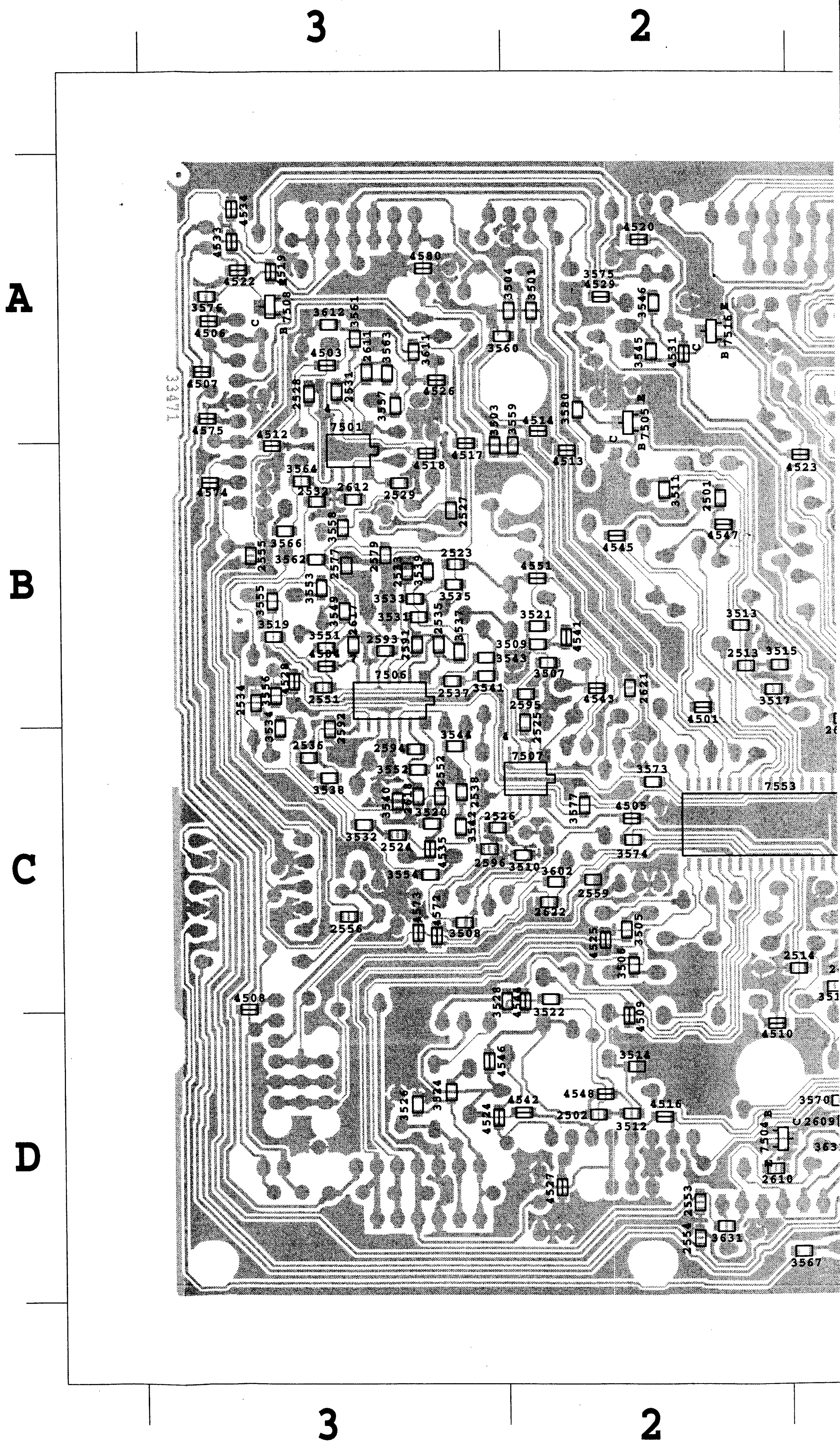
PCS 96 817

AF2 COMPONENT LAYOUT


1
2
3
A
B
C
D
POWER
TUNER
CD/3-CDC
TAPE MOTOR
POWER
FK
ETF2
HP
SK
AUX
PHONO
TAPE MOTOR
FLOW DIRECTION
PHILIPS
3139 113 3347.1
mc150/af2-94V0-p1-960703-1
p1-960703-1
3139 113 33471
af2 a/s

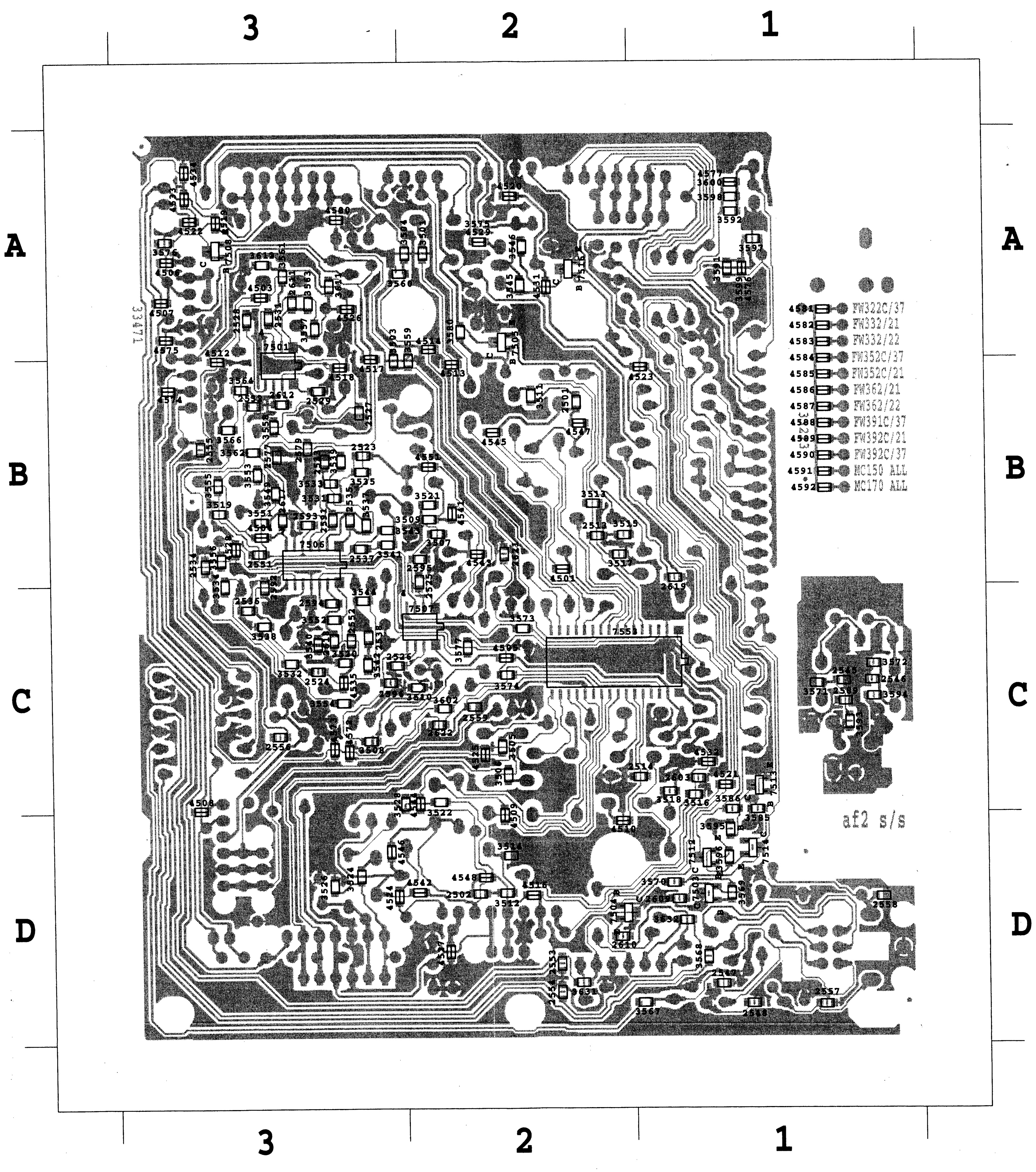
51	D	3	2613	A	1	9531	B	3
52	A	2	2614	A	1	9533	A	2
53	A	3	2615	B	3	9534	C	2
54	D	2	2616	C	3	9535	C	3
55	D	3	2620	B	3	9536	C	3
56	D	3	3502	C	2	9537	C	3
57	A	3	3523	D	3	9538	B	2
58	A	2	3525	D	3	9540	D	1
59	A	1	3527	B	2	9541	D	1
60	D	3	3529	C	1	9542	D	2
61	D	2	3530	C	1	9543	D	1
62	A	3	3536	B	3	9544	C	3
65	A	3	3547	A	1	9545	C	3
1501	A	3	3548	A	1	9546	C	3
1502	D	3	3550	B	3	9547	C	3
1505	C	1	3565	A	3	9548	C	3
1507	C	1	3578	C	2	9549	C	3
1508	D	1	3581	A	2	9551	D	1
1510	B	1	3582	B	1	9552	C	2
1511	D	2	3583	B	1	9553	D	2
1512	D	3	3584	A	1	9554	C	3
1513	B	1	3587	C	1	9556	C	2
1515	A	1	3588	C	1	9558	C	2
1516	D	1	3589	A	2	9560	A	3
2503	B	2	3601	C	2	9561	A	2
2504	D	2	3635	B	3	9562	A	2
2505	B	2	5501	B	3	9563	C	1
2506	C	2	5502	D	1	9565	C	3
2507	B	2	5503	D	1	9566	A	2
2508	C	1	5504	D	1	9567	B	3
2511	B	2	6501	A	2	9569	A	3
2512	C	2	6510	C	3	9570	C	3
2515	A	3	6511	B	3	9571	D	2
2517	B	2	7515	A	2	9572	C	2
2518	D	1	9503	C	1	9573	C	3
2521	B	2	9505	C	1	9578	B	1
2522	D	3	9506	C	2	9579	A	3
2539	C	3	9507	C	1	9580	C	3
2540	B	2	9508	C	2	9581	B	2
2541	B	3	9509	C	2	9582	B	2
2542	B	3	9511	C	2	9583	D	1
2543	A	3	9512	A	1	9584	C	1
2544	B	3	9513	B	3	9585	B	3
2549	A	2	9514	C	3	9586	B	1
2550	B	2	9515	A	3	9589	D	2
2573	C	1	9516	B	2	9590	B	2
2574	C	1	9517	B	1	9591	D	1
2575	D	1	9518	D	1			
2580	D	2	9519	B	1			
2581	C	1	9520	B	1			
2582	D	2	9521	A	1			
2583	A	2	9522	A	1			
2584	C	1	9523	A	1			
2585	A	2	9524	B	1			
2587	C	2	9525	B	3			
2588	C	2	9528	B	3			
2601	C	2	9529	B	3			
2602	C	2	9530	D	1			

AF2 CHIP LAYOUT


3
2
A
B
C
D
7501
7506
7507
7553
33471

AF2 CHIP LAYOUT

51	D	3	2613	A	1	9531	B	3
52	A	2	2614	A	1	9533	A	2
53	A	3	2615	B	3	9534	C	2
54	D	2	2616	C	3	9535	C	3
55	D	3	2620	B	3	9536	C	3
56	D	3	3502	C	2	9537	C	3
57	A	3	3523	D	3	9538	B	2
58	A	2	3525	D	3	9540	D	1
59	A	1	3527	B	2	9541	D	1
60	D	3	3529	C	1	9542	D	2
61	D	2	3530	C	1	9543	D	1
62	A	3	3536	B	3	9544	C	3
65	A	3	3547	A	1	9545	C	3
1501	A	3	3548	A	1	9546	C	3
1502	D	3	3550	B	3	9547	C	3
1505	C	1	3565	A	3	9548	C	3
1507	C	1	3578	C	2	9549	C	3
1508	D	1	3581	A	2	9551	D	1
1510	B	1	3582	B	1	9552	C	2
1511	D	2	3583	B	1	9553	D	2
1512	D	3	3584	A	1	9554	C	3
1513	B	1	3587	C	1	9556	C	2
1515	A	1	3588	C	1	9558	C	2
1516	D	1	3589	A	2	9560	A	3
2503	B	2	3601	C	2	9561	A	2
2504	D	2	3635	B	3	9562	A	2
2505	B	2	5501	B	3	9563	C	1
2506	C	2	5502	D	1	9565	C	3
2507	B	2	5503	D	1	9566	A	2
2508	C	1	5504	D	1	9567	B	3
2511	B	2	6501	A	2	9569	A	3
2512	C	2	6510	C	3	9570	C	3
2515	A	3	6511	B	3	9571	D	2
2517	B	2	7515	A	2	9572	C	2
2518	D	1	9503	C	1	9573	C	3
2521	B	2	9505	C	1	9578	B	1
2522	D	3	9506	C	2	9579	A	3
2539	C	3	9507	C	1	9580	C	3
2540	B	2	9508	C	2	9581	B	2
2541	B	3	9509	C	2	9582	B	2
2542	B	3	9511	C	2	9583	D	1
2543	A	3	9512	A	1	9584	C	1
2544	B	3	9513	B	3	9585	B	3
2549	A	2	9514	C	3	9586	B	1
2550	B	2	9515	A	3	9589	D	2
2573	C	1	9516	B	2	9590	B	2
2574	C	1	9517	B	1	9591	D	1
2575	D	1	9518	D	1			
2580	D	2	9519	B	1			
2581	C	1	9520	B	1			
2582	D	2	9521	A	1			
2583	A	2	9522	A	1			
2584	C	1	9523	A	1			
2585	A	2	9524	B	1			
2587	C	2	9525	B	3			
2588	C	2	9528	B	3			
2601	C	2	9529	B	3			
2602	C	2	9530	D	1			



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2502	D	2	3510	C	2	3580	A	2	4572	C	3
2513	B	2	3511	B	2	3585	C	1	4573	C	3
2514	C	1	3512	D	2	3586	C	1	4574	B	3
2523	B	3	3513	B	2	3591	A	1	4575	A	3
2524	C	3	3514	D	2	3592	A	1	4576	A	1
2525	B	2	3515	B	2	3593	C	1	4577	A	1
2526	C	3	3516	C	1	3594	C	1	4580	A	3
2527	B	3	3517	B	2	3595	D	1	4581	A	1
2528	A	3	3518	C	1	3596	D	1	4582	A	1
2529	B	3	3519	B	3	3597	A	1	4583	A	1
2531	A	3	3520	C	3	3598	A	1	4584	B	1
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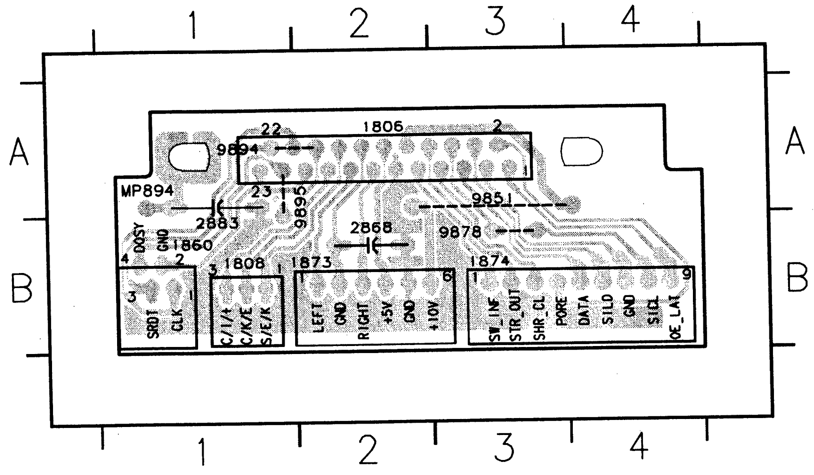
2533	B	3	3522	C	2	3600	A	1	4586	B	1
2534	B	3	3524	D	3	3602	C	2	4587	B	1
2535	B	3	3526	D	3	3611	A	3	4588	B	1
2536	C	3	3528	C	3	3612	A	3	4589	B	1
2537	B	3	3531	B	3	3631	D	2	4590	B	1
2538	C	3	3532	C	3	3632	D	1	4591	B	1
2545	C	1	3533	B	3	4501	B	2	4592	B	1
2546	C	1	3534	C	3	4503	A	3	7501	B	3
2547	D	1	3535	B	3	4504	B	3	7503	D	1
2548	D	1	3537	B	3	4505	C	2	7504	D	2
2551	B	3	3538	C	3	4506	A	3	7505	A	2
2552	C	3	3539	B	3	4507	A	3	7506	B	3
2553	D	2	3540	C	3	4508	C	3	7507	C	2
2554	D	2	3541	B	3	4509	D	2	7508	A	3
2555	B	3	3542	C	3	4510	D	2	7512	D	1
2556	C	3	3543	B	3	4512	B	3	7513	C	1
2557	D	1	3544	C	3	4513	B	2	7514	D	1
2558	D	1	3545	A	2	4514	A	2	7516	A	2
2559	C	2	3546	A	2	4516	D	2	7553	C	2
2577	B	3	3549	B	3	4517	B	3			
2579	B	3	3551	B	3	4518	B	3			
2589	C	1	3552	C	3	4519	A	3			
2591	B	3	3553	B	3	4520	A	2			
2592	C	3	3554	C	3	4521	C	1			
2593	B	3	3555	B	3	4522	A	3			
2594	C	3	3556	B	3	4523	B	1			
2595	B	2	3557	A	3	4524	D	3			
2596	C	3	3558	B	3	4525	C	2			
2603	C	1	3559	B	2	4526	A	3			
2609	D	1	3560	A	3	4527	D	2			
2610	D	2	3561	A	3	4528	B	3			
2611	A	3	3562	B	3	4529	A	2			
2612	B	3	3563	A	3	4531	A	2			
2617	B	3	3564	B	3	4532	C	1			
2618	C	3	3566	B	3	4533	A	3			
2619	B	1	3567	D	1	4534	A	3			
2621	B	2	3568	D	1	4535	C	3			
2622	C	2	3569	D	1	4541	B	2			
3501	A	2	3570	D	1	4542	D	2			
3503	B	3	3571	C	1	4543	B	2			
3504	A	2	3572	C	1	4544	C	2			
3505	C	2	3573	C	2	4545	B	2			
3506	C	2	3574	C	2	4546	D	3			
3507	B	2	3575	A	2	4547	B	2			
3508	C	3	3576	A	3	4548	D	2			

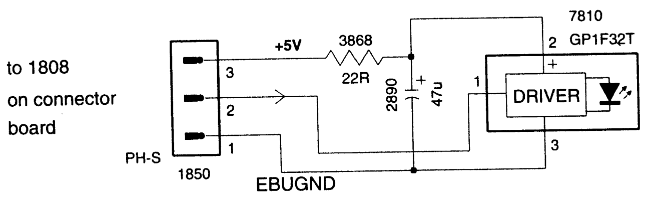
Connector Board Copperside view

1806	A2	1873	B2	2883	B1	9894	A1
1808	B1	1874	B3	9851	A3	9895	A2
1860	B1	2868	B2	9878	B3	MP894	A1



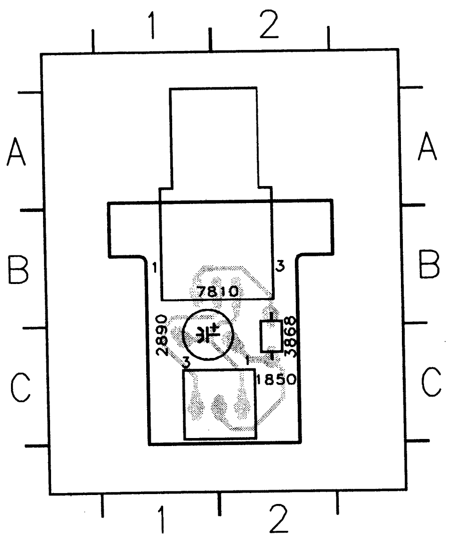
1
2
3
4
A
B
1806
22
2
9894
9895
MP894
23
2883
2868
9851
9878
1860
1808
1873
1874
DOSY
GND
SRDT
CLK
C/I/+
C/K/E
S/E/K
LEFT
GND
RIGHT
+5V
GND
+10V
SW_INF
STR_OUT
SHR_CL
PORE
DATA
SILD
GND
SICL
OE_LAT

Circuit Diagram Optical out



to 1808
on connector
board
PH-S
1850
+5V
3868
22R
2890
47u
7810
GP1F32T
DRIVER
EBUGND
1
2
3

Component Layout Optical out



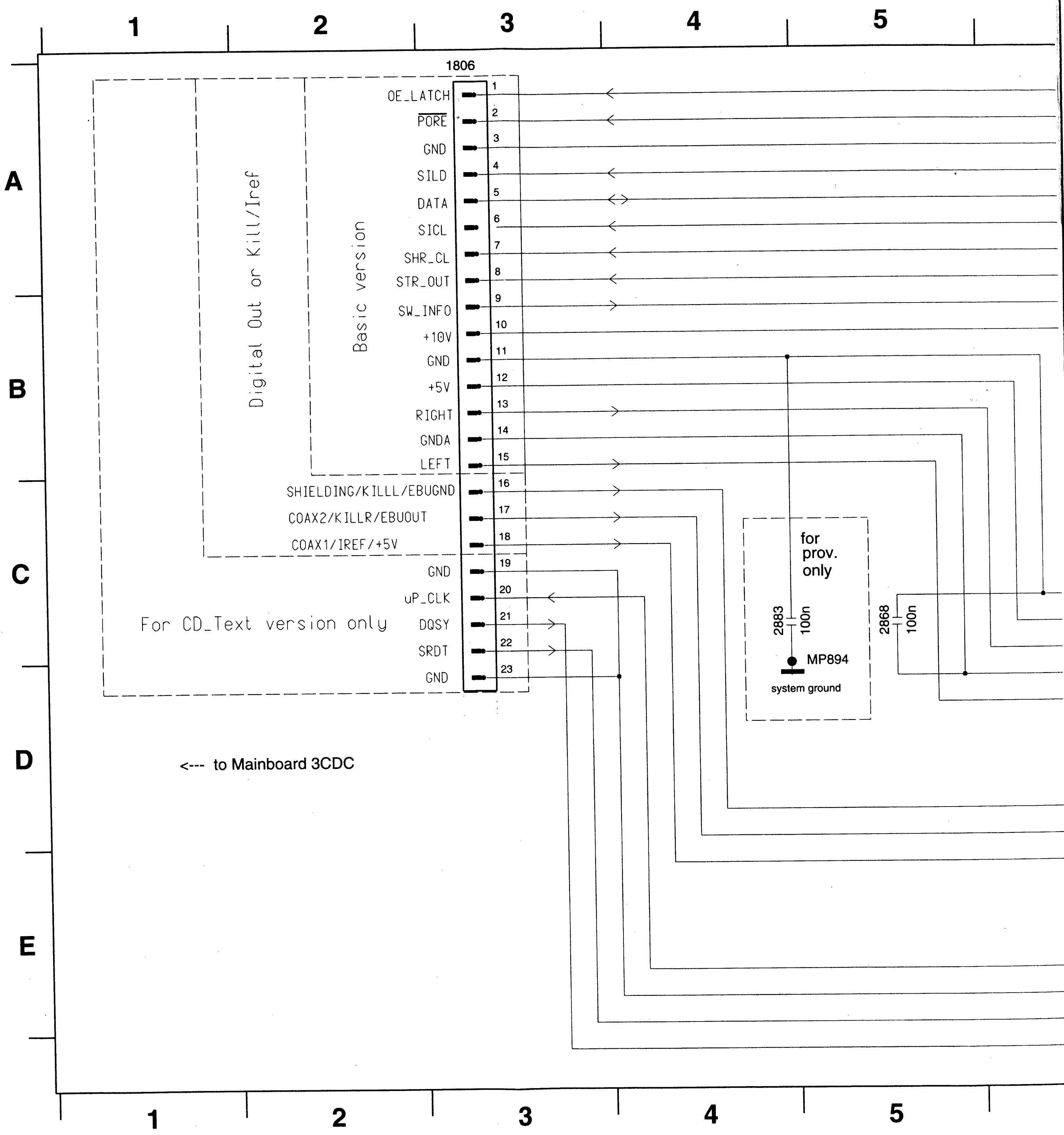
1
2
A
B
C
7810
2890
3868
1850

1850	C2
2890	C1
3868	C2
7810	B1

NOT ON ALL VERSIONS

Circuit diagram Connector Board

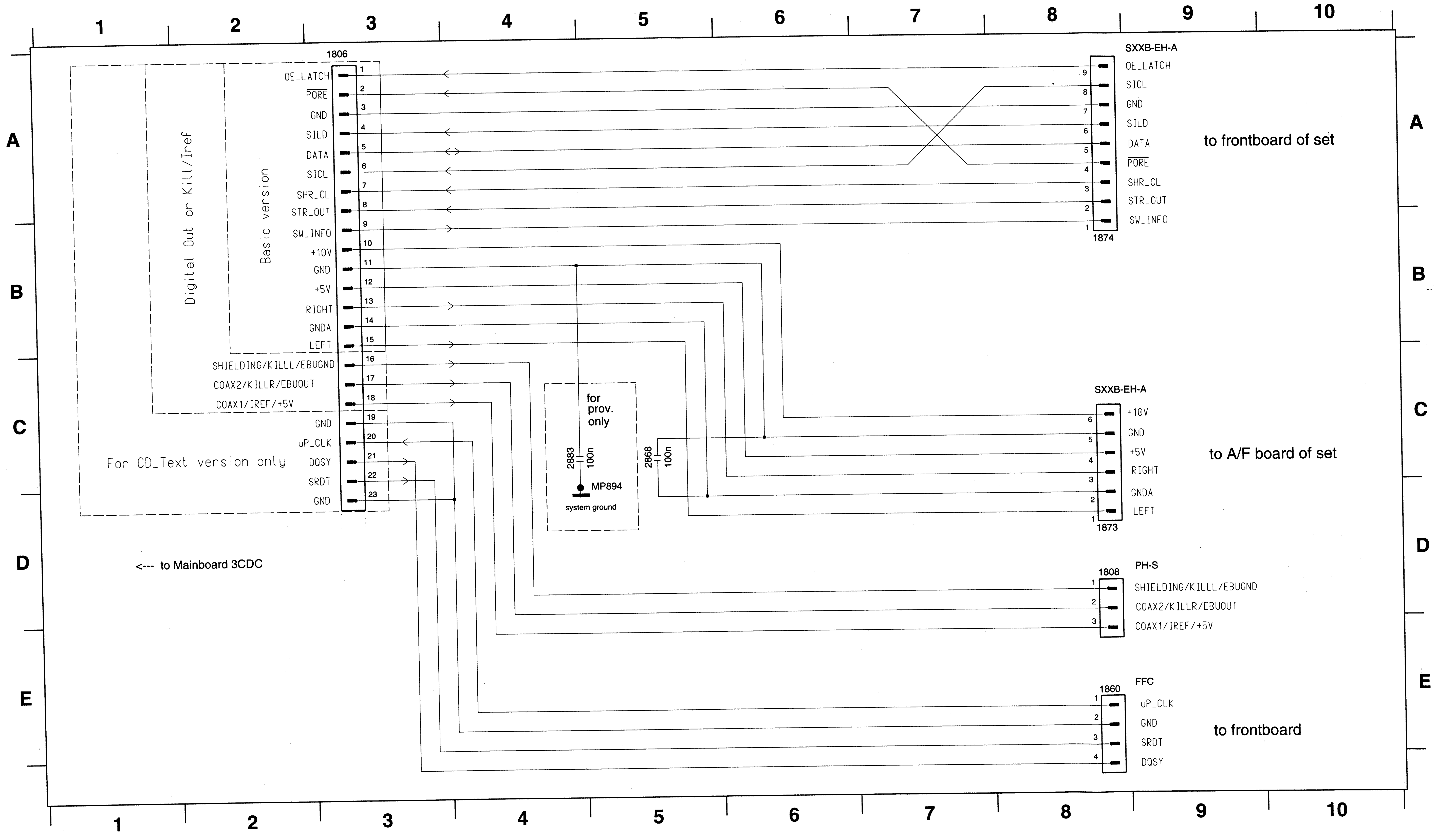
1806	A3	1860	E8	1874	B8	2883 C4
1808	D8	1873	D8	2868	C5	



1
2
3
4
5
A
B
C
D
E
1806
OE_LATCH
PORE
GND
SILD
DATA
SICL
SHR_CL
STR_OUT
SW_INFO
+10V
GND
+5V
RIGHT
GNDA
LEFT
SHIELDING/KILLL/EBUGND
COAX2/KILLR/EBUOUT
COAX1/IREF/+5V
GND
uP_CLK
DOSY
SRDT
GND
Digital Out or Kill/Iref
Basic version
For CD_Text version only
for prov. only
2883
100n
2868
100n
MP894
system ground
<--- to Mainboard 3CDC

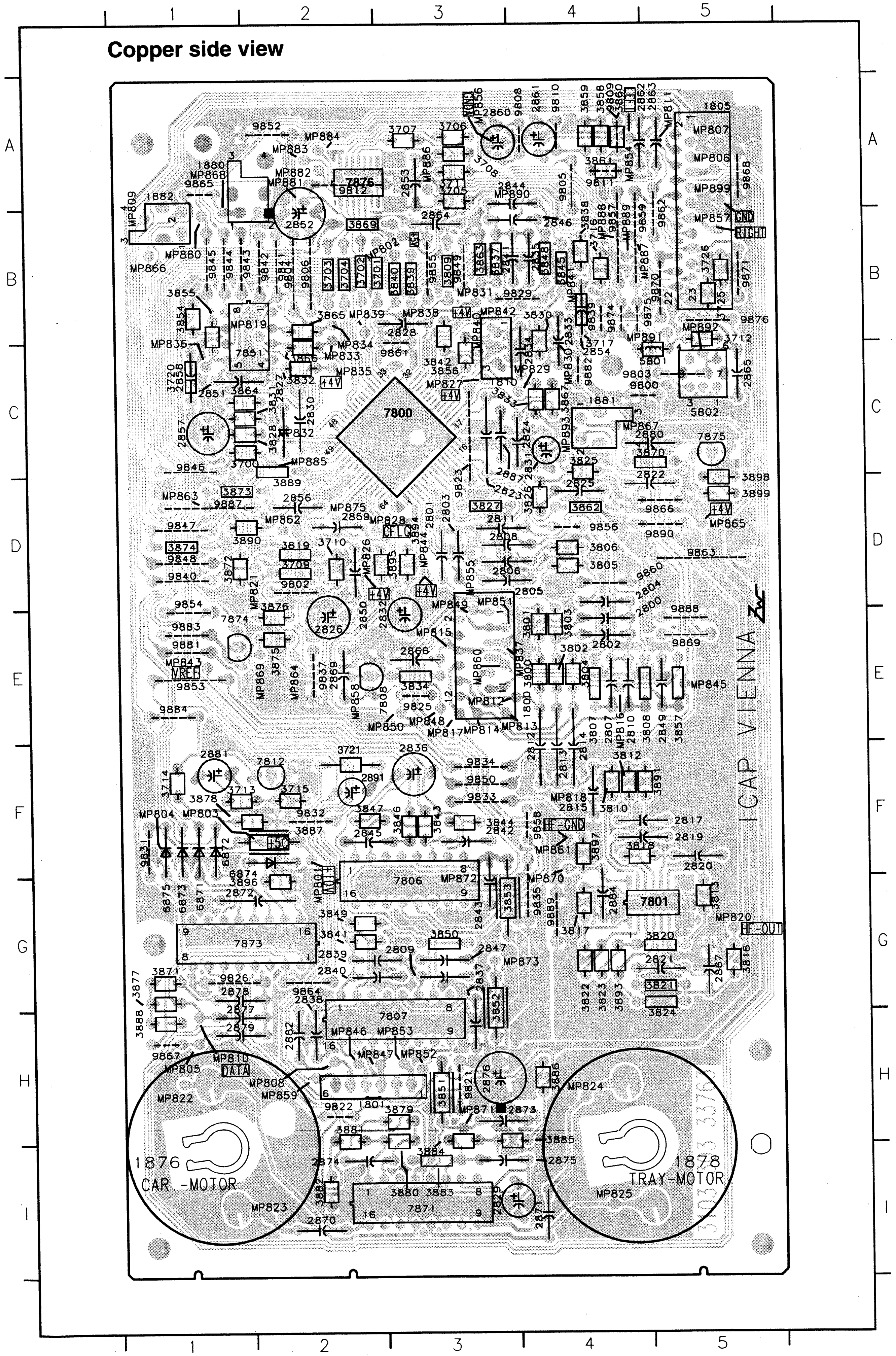
Circuit diagram Connector Board

1806	A3	1860	E8	1874	B8	2883	C4
1808	D8	1873	D8	2868	C5		


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
1806
OE_LATCH
PORE
GND
SILD
DATA
SICL
SHR_CL
STR_OUT
SW_INFO
+10V
GND
+5V
RIGHT
GNDA
LEFT
SHIELDING/KILLL/EBUGND
COAX2/KILLR/EBUOUT
COAX1/IREF/+5V
GND
uP_CLK
DQSY
SRDT
GND
Digital Out or Kill/Iref
Basic version
For CD_Text version only
<--- to Mainboard 3CDC
for prov. only
2883
100n
MP894
system ground
2868
100n
SXXB-EH-A
1874
OE_LATCH
SICL
GND
SILD
DATA
PORE
SHR_CL
STR_OUT
SW_INFO
to frontboard of set
SXXB-EH-A
1873
+10V
GND
+5V
RIGHT
GNDA
LEFT
to A/F board of set
1808
PH-S
SHIELDING/KILLL/EBUGND
COAX2/KILLR/EBUOUT
COAX1/IREF/+5V
1860
FFC
uP_CLK
GND
SRDT
DQSY
to frontboard

1850	C2
2890	C1
3868	C2
7810	B1

Copper side view



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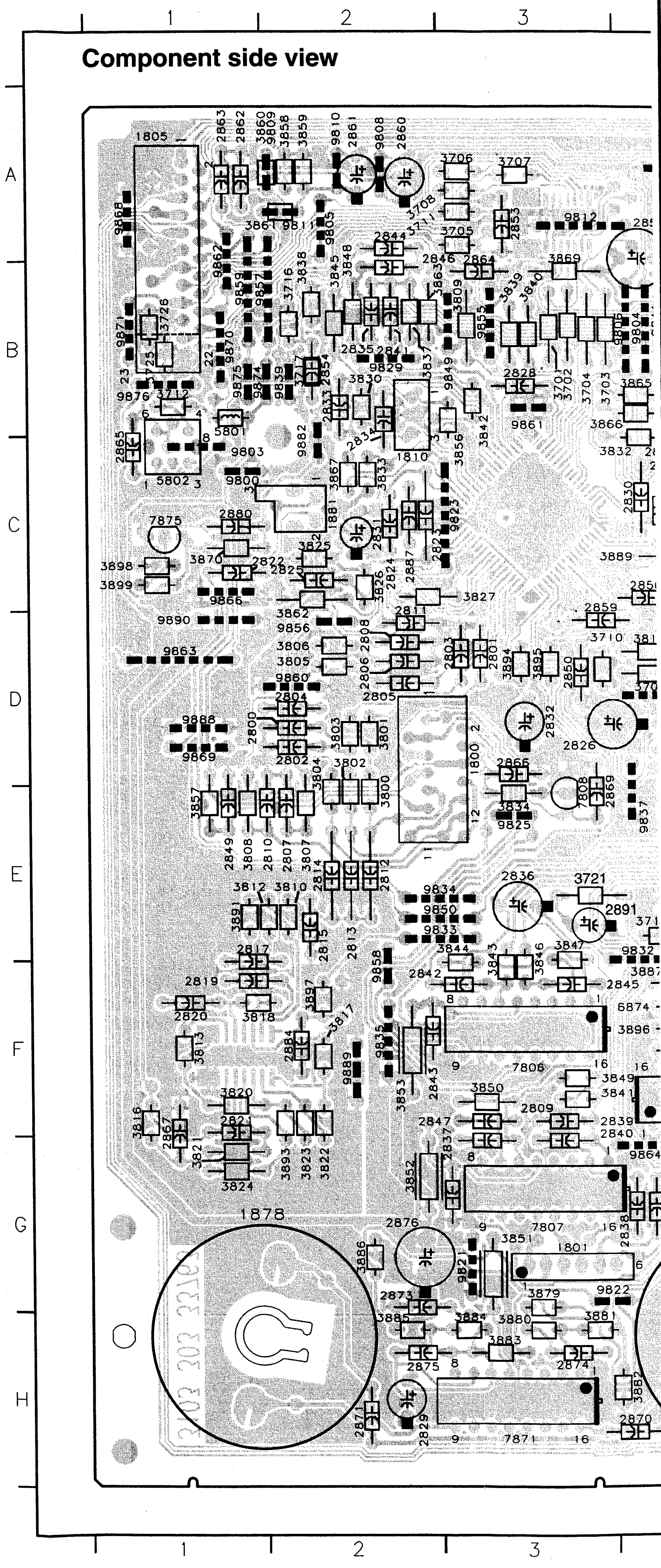
1801	H2	2870	I2	3843	F3	9803	C5
1805	B5	2871	I4	3844	F3	9804	B2
1810	C3	2872	G2	3845	B4	9805	A4
1876	I1	2873	H3	3846	F3	9806	B2
1878	I4	2874	I2	3847	F2	9808	A4
1880	B2	2875	I3	3848	B4	9809	A4
1881	C4	2876	H3	3849	G2	9810	A4
1882	B1	2877	G1	3850	G3	9811	A4
2800	D4	2878	G1	3851	H3	9812	A2
2801	D3	2879	H1	3852	G3	9821	H3
2802	E4	2880	C5	3853	G3	9822	H2
2803	D3	2881	F1	3854	B1	9823	C3
2804	D4	2882	H2	3855	B1	9825	E3
2805	D3	2884	G4	3856	C3	9826	G1
2806	D3	2887	C3	3857	E5	9829	B4
2807	E4	3700	C1	3858	A4	9831	F1
2808	D3	3701	B3	3859	A4	9832	F2
2809	G3	3702	B2	3860	A4	9833	F3
2810	E4	3703	B2	3861	A4	9834	F3
2811	D3	3704	B2	3862	D4	9835	G4
2812	F4	3705	A3	3863	B3	9837	E2
2813	F4	3706	A3	3864	C1	9839	B4
2814	F4	3707	A3	3865	B2	9840	D1
2815	F4	3708	A3	3866	C2	9841	B2
2817	F4	3709	D2	3867	C4	9842	B2
2819	F4	3710	D2	3869	B2	9843	B2
2820	F5	3711	A3	3870	C5	9844	B1
2821	G5	3712	B5	3871	G1	9845	B1
2822	D5	3713	F1	3872	D1	9846	C1
2823	C3	3714	F1	3873	D1	9847	D1
2824	C4	3715	F2	3874	D1	9848	D1
2825	D4	3716	B4	3875	E2	9849	B3
2826	D2	3717	B4	3876	E2	9850	F3
2827	C2	3720	C1	3877	G1	9852	A2
2828	B3	3725	B5	3878	F2	9853	E1
2829	I3	3726	B5	3879	H3	9854	D1
2830	C2	3800	E4	3880	H3	9855	B3
2831	C4	3801	E4	3881	H2	9856	D4
2832	E3	3802	E4	3882	I2	9857	B4
2833	B4	3803	E4	3883	I3	9858	F4
2834	C3	3804	E4	3884	H3	9859	B4
2835	B4	3805	D4	3885	H3	9860	D4
2836	F3	3806	D4	3886	H4	9861	B3
2837	H3	3807	E4	3887	F2	9862	B5
2838	H2	3808	E4	3888	H1	9863	D5
2839	G2	3809	B3	3889	C2	9864	G2
2840	G2	3810	F4	3890	D1	9865	A1
2841	B3	3812	F4	3891	F4	9866	D5
2842	F3	3813	G5	3893	G4	9867	H1
2843	G3	3816	G5	3894	D3	9868	A5
2844	B4	3817	G4	3895	D3	9869	E5
2845	F2	3818	F4	3896	G2	9870	B5
2846	B4	3819	D2	3897	F4	9871	B5
2847	G3	3820	G5	3898	D5	9874	B4
2849	E5	3821	G5	3899	D5	9875	B4
2850	D2	3822	G4	5801	B5	9876	B5
2851	C1	3823	G4	5802	C5	9881	E1
2852	A2	3824	G5	6871	F1	9882	C4
2853	A3	3825	C4	6872	F1	9883	E1
2854	B4	3826	D4	6873	F1	9884	E1
2856	D2	3827	D3	6874	F2	9887	D1
2857	C1	3828	C1	6875	F1	9888	E5
2858	C1	3830	B4	7806	G3	9889	G4
2859	D2	3831	C1	7807	H3	9890	D5
2860	A3	3832	C2	7808	E2		
2861	A4	3833	C4	7812	F2		
2862	A4	3834	E3	7851	B2		
2863	A5	3837	B3	7871	I3		
2864	B3	3838	B4	7873	G1		
2865	C5	3839	B3	7874	E1		
2866	E3	3840	B3	7875	C5		
2867	G5	3841	G2	9800	C4		

Component side view



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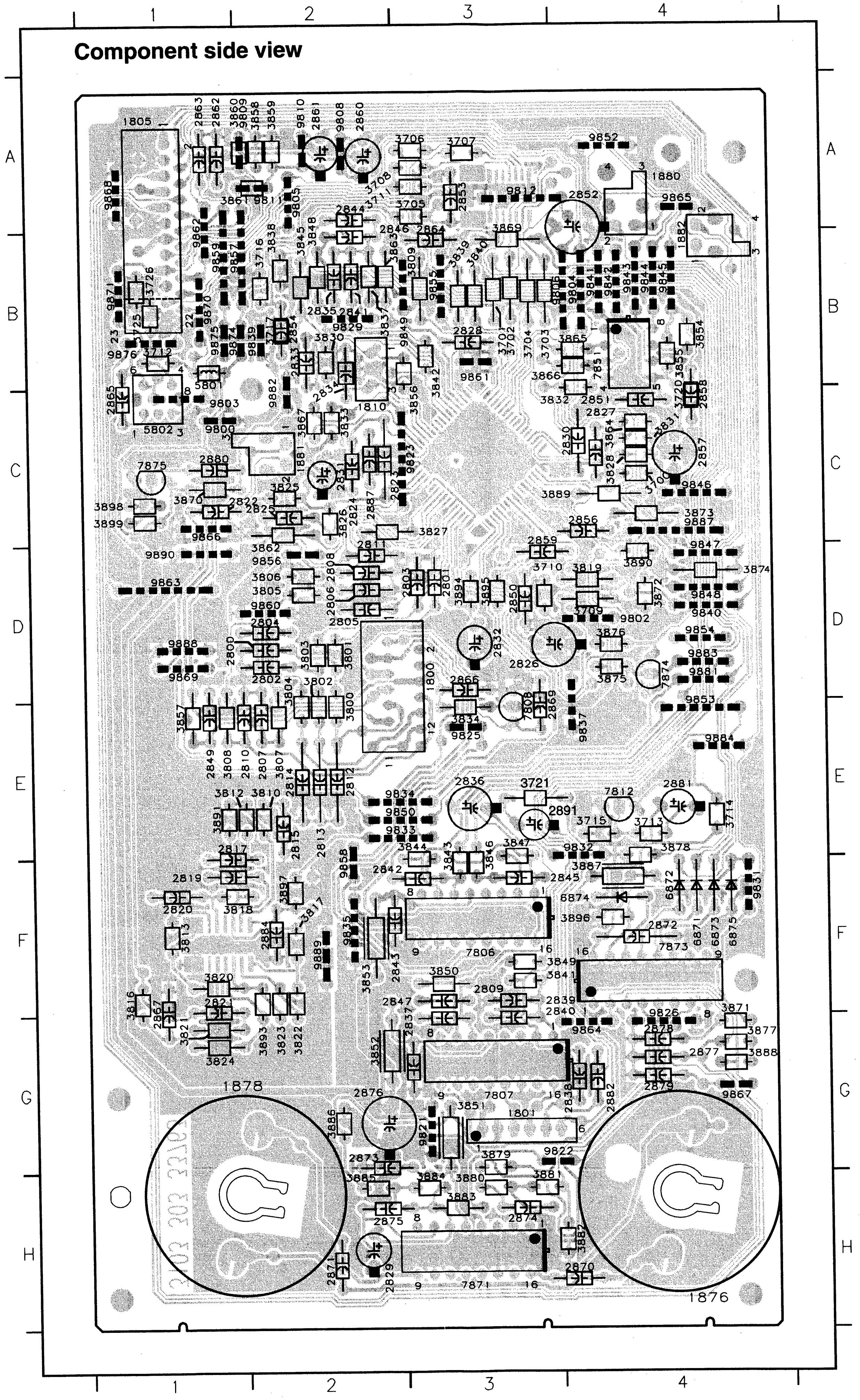
1805	B5	2871	I4	3844	F3	9804	B2
1810	C3	2872	G2	3845	B4	9805	A4
1876	I1	2873	H3	3846	F3	9806	B2
1878	I4	2874	I2	3847	F2	9808	A4
1880	B2	2875	I3	3848	B4	9809	A4
1881	C4	2876	H3	3849	G2	9810	A4
1882	B1	2877	G1	3850	G3	9811	A4
2800	D4	2878	G1	3851	H3	9812	A2
2801	D3	2879	H1	3852	G3	9821	H3
2802	E4	2880	C5	3853	G3	9822	H2
2803	D3	2881	F1	3854	B1	9823	C3
2804	D4	2882	H2	3855	B1	9825	E3
2805	D3	2884	G4	3856	C3	9826	G1
2806	D3	2887	C3	3857	E5	9829	B4
2807	E4	3700	C1	3858	A4	9831	F1
2808	D3	3701	B3	3859	A4	9832	F2
2809	G3	3702	B2	3860	A4	9833	F3
2810	E4	3703	B2	3861	A4	9834	F3
2811	D3	3704	B2	3862	D4	9835	G4
2812	F4	3705	A3	3863	B3	9837	E2
2813	F4	3706	A3	3864	C1	9839	B4
2814	F4	3707	A3	3865	B2	9840	D1
2815	F4	3708	A3	3866	C2	9841	B2
2817	F4	3709	D2	3867	C4	9842	B2
2819	F4	3710	D2	3869	B2	9843	B2
2820	F5	3711	A3	3870	C5	9844	B1
2821	G5	3712	B5	3871	G1	9845	B1
2822	D5	3713	F1	3872	D1	9846	C1
2823	C3	3714	F1	3873	D1	9847	D1
2824	C4	3715	F2	3874	D1	9848	D1
2825	D4	3716	B4	3875	E2	9849	B3
2826	D2	3717	B4	3876	E2	9850	F3
2827	C2	3720	C1	3877	G1	9852	A2
2828	B3	3725	B5	3878	F2	9853	E1
2829	I3	3726	B5	3879	H3	9854	D1
2830	C2	3800	E4	3880	H3	9855	B3
2831	C4	3801	E4	3881	H2	9856	D4
2832	E3	3802	E4	3882	I2	9857	B4
2833	B4	3803	E4	3883	I3	9858	F4
2834	C3	3804	E4	3884	H3	9859	B4
2835	B4	3805	D4	3885	H3	9860	D4
2836	F3	3806	D4	3886	H4	9861	B3
2837	H3	3807	E4	3887	F2	9862	B5
2838	H2	3808	E4	3888	H1	9863	D5
2839	G2	3809	B3	3889	C2	9864	G2
2840	G2	3810	F4	3890	D1	9865	A1
2841	B3	3812	F4	3891	F4	9866	D5
2842	F3	3813	G5	3893	G4	9867	H1
2843	G3	3816	G5	3894	D3	9868	A5
2844	B4	3817	G4	3895	D3	9869	E5
2845	F2	3818	F4	3896	G2	9870	B5
2846	B4	3819	D2	3897	F4	9871	B5
2847	G3	3820	G5	3898	D5	9874	B4
2849	E5	3821	G5	3899	D5	9875	B4
2850	D2	3822	G4	5801	B5	9876	B5
2851	C1	3823	G4	5802	C5	9881	E1
2852	A2	3824	G5	6871	F1	9882	C4
2853	A3	3825	C4	6872	F1	9883	E1
2854	B4	3826	D4	6873	F1	9884	E1
2856	D2	3827	D3	6874	F2	9887	D1
2857	C1	3828	C1	6875	F1	9888	E5
2858	C1	3830	B4	7806	G3	9889	G4
2859	D2	3831	C1	7807	H3	9890	D5
2860	A3	3832	C2	7808	E2		
2861	A4	3833	C4	7812	F2		
2862	A4	3834	E3	7851	B2		
2863	A5	3837	B3	7871	I3		
2864	B3	3838	B4	7873	G1		
2865	C5	3839	B3	7874	E1		
2866	E3	3840	B3	7875	C5		
2867	G5	3841	G2	9800	C4		



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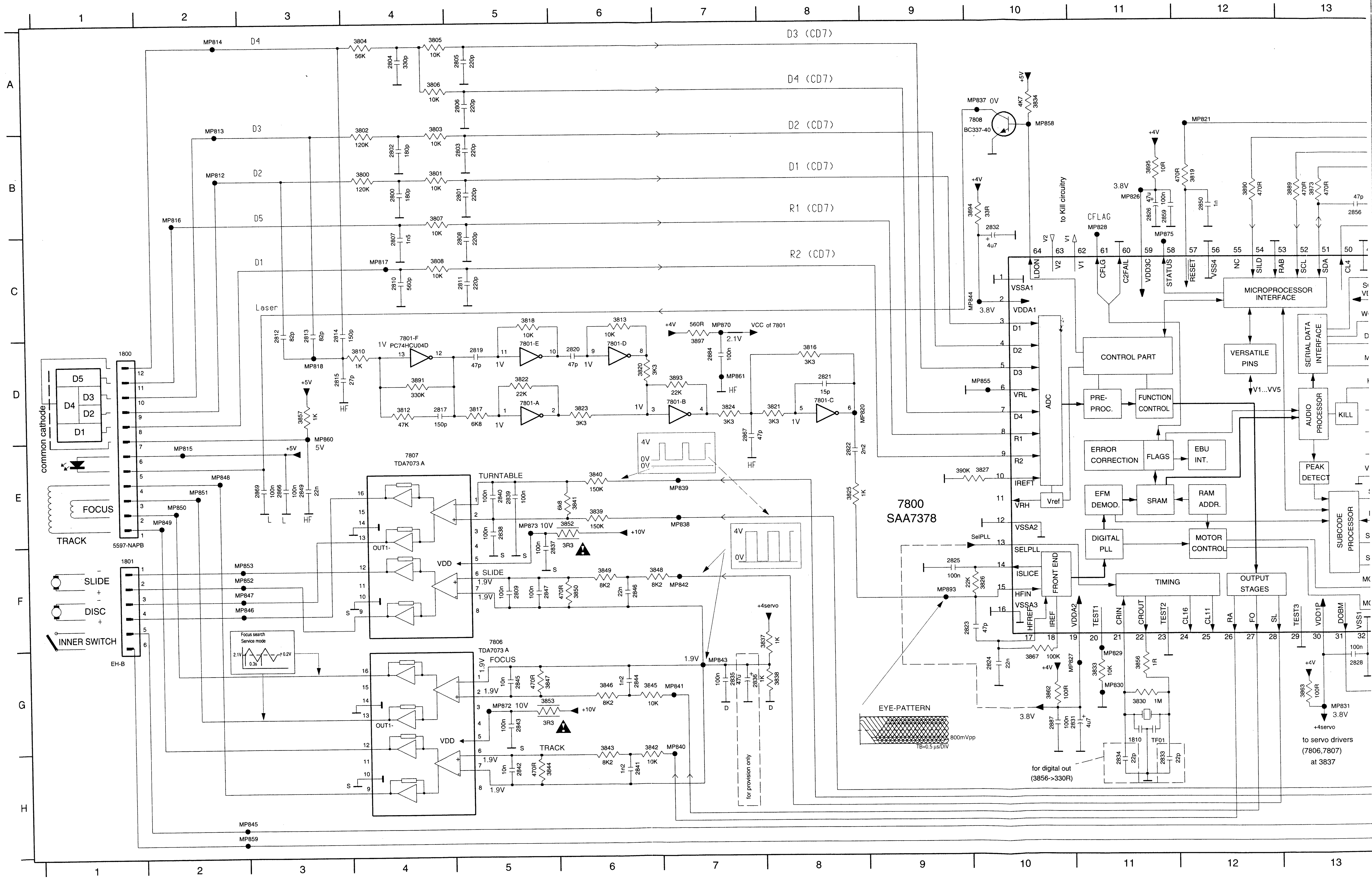
1810	B2	2872	F4	3845	B2	9805	A2
1876	H4	2873	G2	3846	F3	9806	B4
1878	H1	2874	H3	3847	E3	9808	A2
1880	B4	2875	H2	3848	B2	9809	A2
1881	C2	2876	G3	3849	F3	9810	A2
1882	B4	2877	G4	3850	F3	9811	A2
2800	D2	2878	G4	3851	G3	9812	A3
2801	D3	2879	G4	3852	G2	9821	G3
2802	D2	2880	C1	3853	F2	9822	G3
2803	D3	2881	E4	3854	B4	9823	C3
2804	D2	2882	G4	3855	B4	9825	E3
2805	D2	2884	F2	3856	B3	9826	G4
2806	D2	2887	C2	3857	E1	9829	B2
2807	E2	3700	C4	3858	A2	9831	F4
2808	D2	3701	B3	3859	A2	9832	E4
2809	F3	3702	B3	3860	A2	9833	E2
2810	E2	3703	B3	3861	A2	9834	E2
2811	D2	3704	B3	3862	C2	9835	F2
2812	E2	3705	A3	3863	B2	9837	E4
2813	E2	3706	A3	3864	C4	9839	B2
2814	E2	3707	A3	3865	B4	9840	D4
2815	E2	3708	A3	3866	B4	9841	B4
2817	F1	3709	D4	3867	C2	9842	B4
2819	F1	3710	D3	3869	B3	9843	B4
2820	F1	3711	A3	3870	C1	9844	B4
2821	G1	3712	B1	3871	G4	9845	B4
2822	C1	3713	E4	3872	D4	9846	C4
2823	C2	3714	E4	3873	C4	9847	D4
2824	C2	3715	E4	3874	D4	9848	D4
2825	C2	3716	B2	3875	D4	9849	B3
2826	D3	3717	B2	3876	D4	9850	E2
2827	C4	3720	C4	3877	G4	9852	A4
2828	B3	3725	B1	3878	E4	9853	E4
2829	H2	3726	B1	3879	G3	9854	D4
2830	C4	3800	E2	3880	H3	9855	B3
2831	C2	3801	D2	3881	H3	9856	D2
2832	D3	3802	E2	3882	H4	9857	B2
2833	B2	3803	D2	3883	H3	9858	F2
2834	B2	3804	E2	3884	H3	9859	B1
2835	B2	3805	D2	3885	H2	9860	D2
2836	E3	3806	D2	3886	G2	9861	B3
2837	G2	3807	E2	3887	F4	9862	A1
2838	G4	3808	E1	3888	G4	9863	D1
2839	F3	3809	B3	3889	C4	9864	G4
2840	F3	3810	E2	3890	D4	9865	A4
2841	B2	3812	E2	3891	E1	9866	C1
2842	F3	3813	F1	3893	F2	9867	G4
2843	F2	3816	F1	3894	D3	9868	A1
2844	B2	3817	F2	3895	D3	9869	D1
2845	F3	3818	F1	3896	F4	9870	B1
2846	B2	3819	D4	3897	F2	9871	B1
2847	F3	3820	F1	3898	C1	9874	B2
2849	E1	3821	G1	3899	C1	9875	B1
2850	D3	3822	F2	5801	B1	9876	B1
2851	C4	3823	F2	5802	C1	9881	D4
2852	A4	3824	G1	6871	F4	9882	C2
2853	A3	3825	C2	6872	F4	9883	D4
2854	B2	3826	C2	6873	F4	9884	E4
2856	C4	3827	C2	6874	F4	9887	C4
2857	C4	3828	C4	6875	F4	9888	D1
2858	C4	3830	B2	7806	F3	9889	F2
2859	C3	3831	C4	7807	G3	9890	D1
2860	A2	3832	C4	7808	E3		
2861	A2	3833	C2	7812	E4		
2862	A1	3834	E3	7851	B4		
2863	A1	3837	B2	7871	H3		
2864	B3	3838	B2	7873	F4		
2865	C1	3839	B3	7874	D4		
2866	E3	3840	B3	7875	C1		
2867	F1	3841	F3	9800	C1		

Circuit Diagram Main Board part1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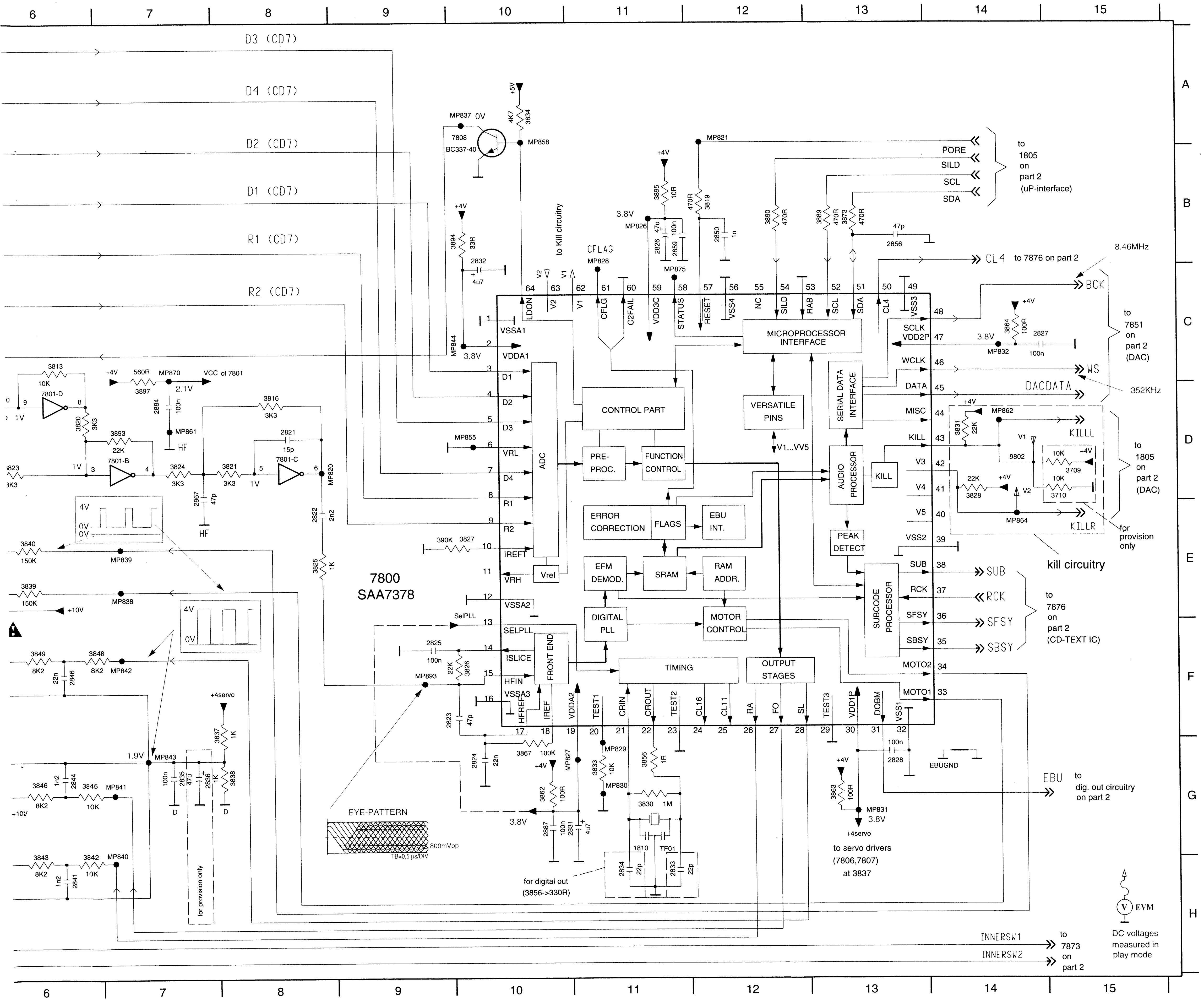
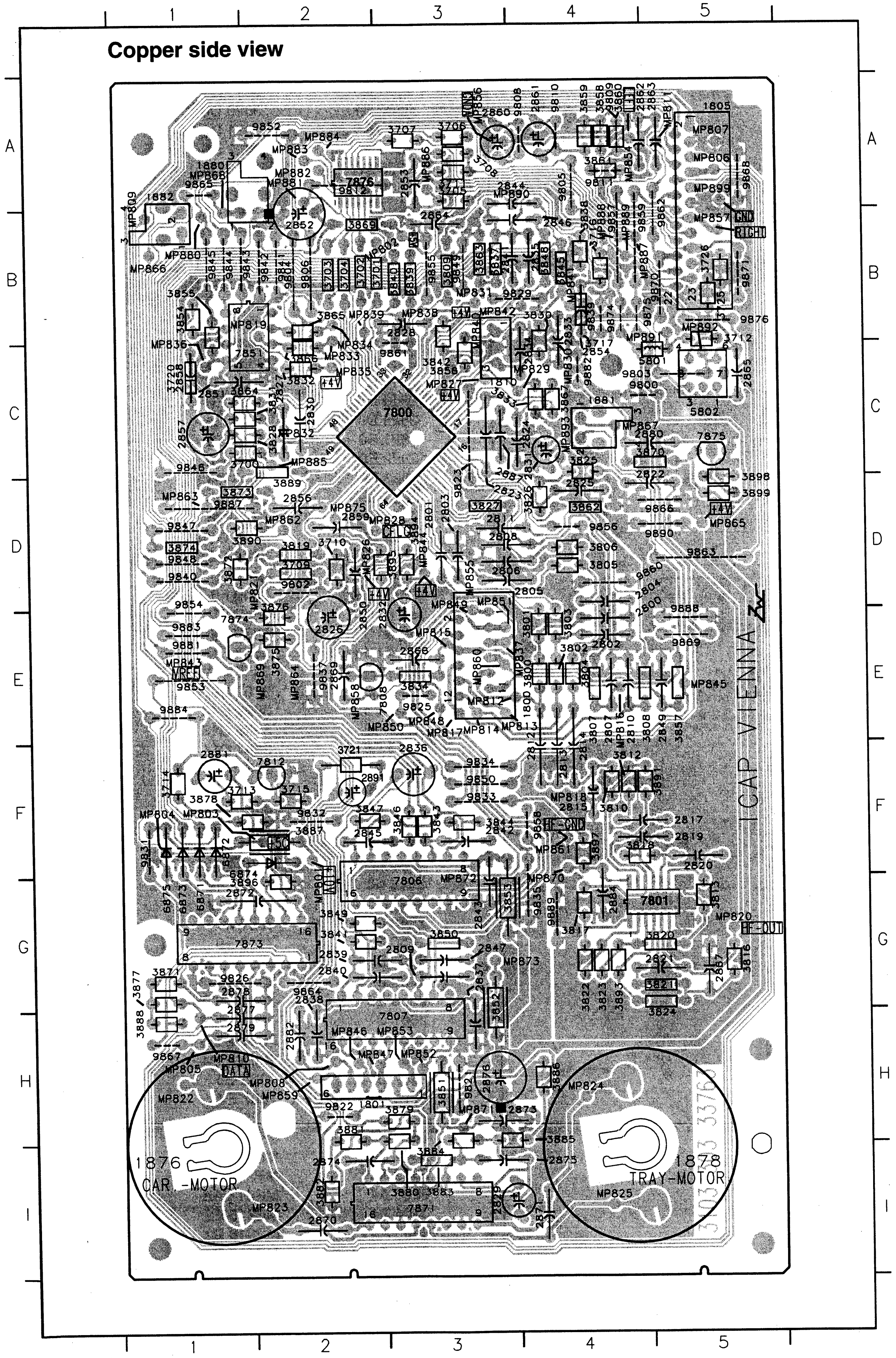
A B C D E F G H
MP814 D4
MP813 D3
MP812 D2
MP816 D5
D1
MP817
Laser
3804 56K
3805 10K
3806 10K
3802 120K
3803 10K
3800 120K
3801 10K
3807 10K
3808 10K
2804 330p
2805 220p
2806 220p
2802 180p
2803 220p
2800 180p
2801 220p
2807 1n5
2808 220p
2810 560p
2811 220p
D3 (CD7)
D4 (CD7)
D2 (CD7)
D1 (CD7)
R1 (CD7)
R2 (CD7)
2812 82p
2813 82p
2814 150p
2815 27p
HF
MP818
3810 1K
7801-F PC74HCU04D
1V
3891 330K
3812 47K
2817 150p
3817 6K8
2819 47p
3818 10K
7801-E
3822 22K
7801-A
3823 3K3
2820 47p
3813 10K
7801-D
3820 3K3
3893 22K
7801-B
3824 3K3
3821 3K3
7801-C
3816 3K3
2821 15p
MP820
2822 2n2
3825 1K
2867 47p
+4V 560R 3897
MP870 2.1V VCC of 7801
2884 100n
MP861
+5V
3857 1K
MP860 5V
MP815
1800
D5 D3 D4 D2 D1
common cathode
FOCUS
TRACK
5597-NAPB
MP848
MP851
MP850
MP849
2869 100n
2866 100n
2849 22n
L L HF
7807 TDA7073 A
TURNTABLE
3840 150K
MP839
3839 150K
MP838
2840 100n
2839 100n
2838 100n
3841 6K8
MP873 10V
3852 3R3
2837 100n
+10V
OUT1-
VDD
SLIDE
1.9V
2809 100n
2847 100n
3850 470R
3849 8K2
2846 2n2
3848 8K2
MP842
4V
0V
1801
SLIDE
DISC
INNER SWITCH
EH-B
MP853
MP852
MP847
MP846
Focus search Service mode
2.1V 0.3s +0.2V
7806 TDA7073 A
FOCUS
2845 10n
3847 470R
3846 8K2
2844 1n2
3845 10K
MP841
MP872 10V
3853 3R3
2843 100n
TRACK
2842 10n
3844 470R
3843 8K2
2841 1n2
3842 10K
MP840
1.9V MP843
2835 100n
2836 47u
3837 1K
3838 1K
+4servo
D D
for provision only
MP845
MP859
+5V
MP837 0V
7808 BC337-40
3834 4K7
MP858
to Kill circuitry
+4V
3894 33R
2832 4u7
MP844 3.8V
MP855
390K 3827
SelPLL
2825 100n
3826 22K
MP893
2823 47p
2824 22n
3867 100K
MP827
+4V
3862 100R
2887 100n
2831 4u7
3.8V
3833 10K
MP829
MP830
3856 1R
3830 1M
1810 TF01
2834 22p
2833 22p
for digital out (3856->330R)
EYE-PATTERN
800mVpp
TB=0.5 µs/DIV
3.8V
MP826
+4V
3895 10R
2826 47u
2859 100n
MP875
CFLAG MP828
3819 470R
MP821
2850 1n
3890 470R
3889 470R
3873 470R
2856 47p
7800 SAA7378
1 VSSA1
2 VDDA1
3 D1
4 D2
5 D3
6 VRL
7 D4
8 R1
9 R2
10 IREFT
11 VRH
12 VSSA2
13 SELPLL
14 ISLICE
15 HFIN
16 VSSA3
17 HFREF
18 IREF
19 VDDA2
20 TEST1
21 CRIN
22 CROUT
23 TEST2
24 CL16
25 CL11
26 RA
27 FO
28 SL
29 TEST3
30 VDD1P
31 DOBM
32 VSS1
64 LDON
63 V2
62 V1
61 CFLG
60 C2FAIL
59 VDD3C
58 STATUS
57 RESET
56 VSS4
55 NC
54 SILD
53 RAB
52 SCL
51 SDA
50 CL4
ADC
Vref
CONTROL PART
PRE-PROC.
FUNCTION CONTROL
ERROR CORRECTION
FLAGS
EBU INT.
EFM DEMOD.
SRAM
RAM ADDR.
DIGITAL PLL
MOTOR CONTROL
FRONT END
TIMING
OUTPUT STAGES
MICROPROCESSOR INTERFACE
VERSATILE PINS
V1...VV5
SERIAL DATA INTERFACE
AUDIO PROCESSOR
KILL
PEAK DETECT
SUBCODE PROCESSOR
+4V
3863 100R
MP831 3.8V
+4servo
to servo drivers (7806,7807) at 3837
2828 100n


D3 (CD7)
D4 (CD7)
D2 (CD7)
D1 (CD7)
R1 (CD7)
R2 (CD7)
7800
SAA7378
MP837 0V
7808
BC337-40
MP858
+5V
4K7
3834
to Kill circuitry
CFLAG
MP828
+4V
3895
10R
3.8V
MP826
2826 47u
2859 100n
MP875
MP821
470R
3819
2850 1n
3890 470R
3889 470R
3873 470R
47p
2856
PORE
SILD
SCL
SDA
to 1805 on part 2 (uP-interface)
CL4 to 7876 on part 2
8.46MHz
BCK
3864 100R
2827 100n
MP832
3.8V
to 7851 on part 2 (DAC)
WS
DACDATA
352KHz
MP862
3831 22K
V1
9802
10K
3709
3710
22K
3828
V2
MP864
KILLL
KILLR
to 1805 on part 2 (DAC)
for provision only
kill circuitry
SUB
RCK
SFSY
SBSY
to 7876 on part 2 (CD-TEXT IC)
EBU to dig. out circuitry on part 2
EBUGND
100n
2828
+4V
3863 100R
MP831 3.8V
+4servo
to servo drivers (7806,7807) at 3837
LDON
V2
V1
CFLG
C2FAIL
VDD3C
STATUS
RESET
VSS4
NC
SILD
RAB
SCL
SDA
CL4
VSS3
VSSA1
VDDA1
D1
D2
D3
VRL
D4
R1
R2
IREFT
VRH
VSSA2
SELPLL
ISLICE
HFIN
VSSA3
HFREF
IREF
VDDA2
TEST1
CRIN
CROUT
TEST2
CL16
CL11
RA
FO
SL
TEST3
VDD1P
DOBM
VSS1
MOTO1
MOTO2
SBSY
SFSY
RCK
SUB
VSS2
V5
V4
V3
KILL
MISC
DATA
WCLK
SCLK VDD2P
ADC
Vref
CONTROL PART
PRE-PROC.
FUNCTION CONTROL
ERROR CORRECTION
FLAGS
EBU INT.
EFM DEMOD.
SRAM
RAM ADDR.
DIGITAL PLL
MOTOR CONTROL
FRONT END
TIMING
OUTPUT STAGES
MICROPROCESSOR INTERFACE
VERSATILE PINS
V1...VV5
SERIAL DATA INTERFACE
AUDIO PROCESSOR
KILL
PEAK DETECT
SUBCODE PROCESSOR
MP844
3894 33R
2832 4u7
3.8V
MP855
390K 3827
SelPLL
2825 100n
22K 3826
MP893
2823 47p
2824 22n
3867 100K
MP827
3862 100R
2887 100n
2831 4u7
3.8V
MP829
3833 10K
MP830
3856 1R
3830 1M
1810
TF01
2834 22p
2833 22p
for digital out (3856->330R)
EYE-PATTERN
800mVpp
TB=0,5 µs/DIV
3813 10K
7801-D
3820 3K3
3893 22K
7801-B
3823 3K3
1V
+4V 560R MP870 VCC of 7801
3897
2884 100n
2.1V
MP861
HF
3816 3K3
3824 3K3
3821 3K3
2821 15p
7801-C
1V
2867 47p
HF
MP820
2822 2n2
3825 1K
4V
0V
3840 150K
MP839
3839 150K
+10V
MP838
3849 8K2
3848 8K2
2846 22n
MP842
+4servo
3837 1K
1.9V MP843
3838 1K
2836
2835 47u 100n
3846 8K2
2844 1n2
3845 10K
MP841
+10V
3843 8K2
2841 1n2
3842 10K
MP840
for provision only
INNERSW1
INNERSW2
to 7873 on part 2
EVM
DC voltages measured in play mode
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H

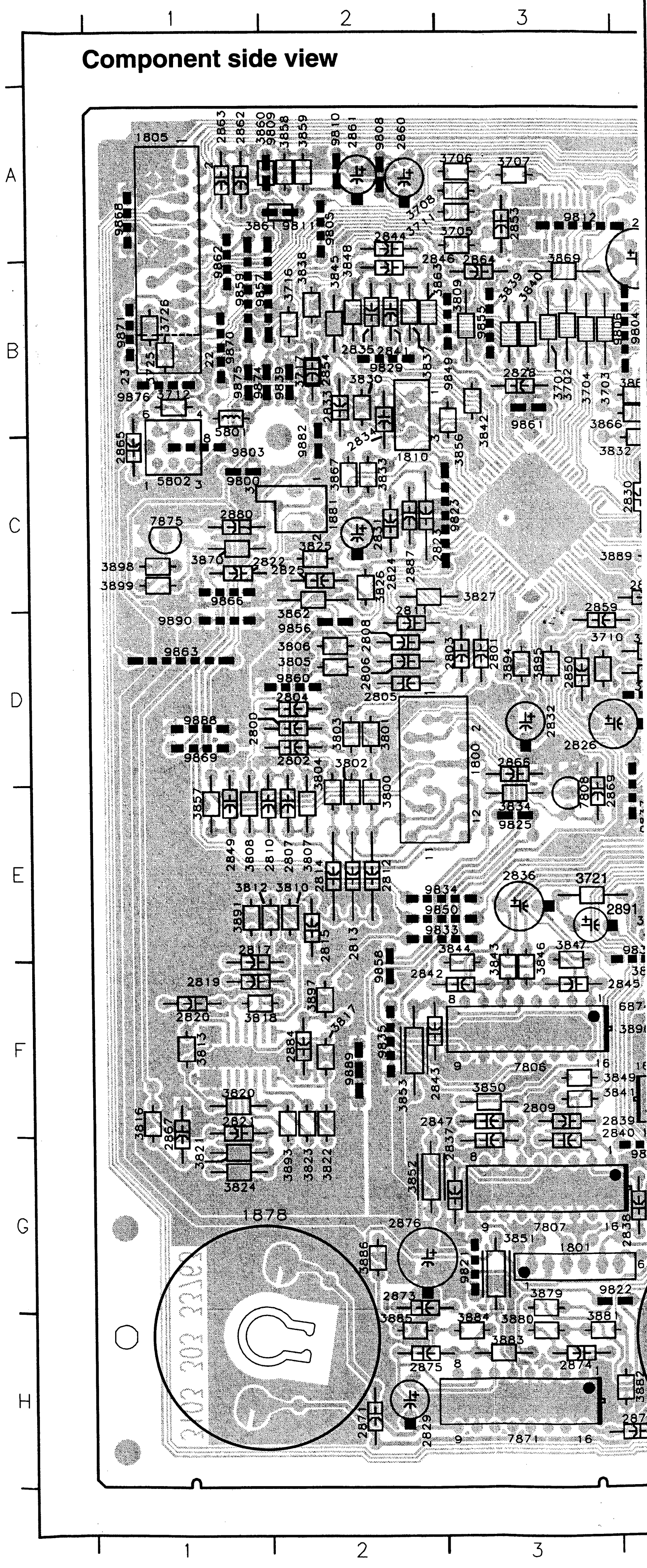
1800	D1	3813	C6	MP827	G10
1801	F1	3816	D8	MP828	B11
1810	G11	3817	D5	MP829	G11
2800	B4	3818	C5	MP830	G11
2801	B5	3819	B12	MP831	G13
2802	B4	3820	D6	MP832	C14
2803	B5	3821	D8	MP837	B10
2804	A4	3822	D5	MP838	E6
2805	A5	3823	D6	MP839	E6
2806	A5	3824	D7	MP840	G7
2807	C4	3825	E8	MP841	G7
2808	C5	3826	F10	MP842	F7
2809	F5	3827	E10	MP843	G7
2810	C4	3828	D14	MP844	C10
2811	C5	3830	G11	MP845	H3
2812	C3	3831	D14	MP846	F2
2813	C3	3833	G11	MP847	F2
2814	C3	3834	B10	MP848	E2
2815	D3	3837	F8	MP849	E2
2817	D4	3838	G8	MP850	E2
2819	D5	3839	E6	MP851	E2
2820	D6	3840	E6	MP852	F2
2821	D8	3841	E6	MP853	F2
2822	E8	3842	G6	MP855	D10
2823	F9	3843	G6	MP858	B10
2824	G9	3844	H5	MP859	H3
2825	F9	3845	G6	MP860	D3
2826	B11	3846	G6	MP861	D7
2827	C14	3847	G5	MP862	D14
2828	G13	3848	F6	MP864	E14
2831	G10	3849	F6	MP870	C7
2832	B10	3850	F6	MP872	G5
2833	H11	3852	E6	MP873	E5
2834	H11	3853	G5	MP875	C11
2835	G7	3856	G11	MP893	F9
2836	G7	3857	D3		
2837	F5	3862	G10		
2838	E5	3863	G13		
2839	E5	3864	C14		
2840	E5	3867	G10		
2841	H6	3873	B13		
2842	H5	3889	B13		
2843	G5	3890	B12		
2844	G6	3891	D4		
2845	G5	3893	D7		
2846	F6	3894	B10		
2847	F5	3895	B11		
2849	E3	3897	D7		
2850	B12	7800	E9		
2856	B13	7801-A	D5		
2859	B11	7801-B	D7		
2866	E3	7801-C	D8		
2867	D7	7801-D	D6		
2869	E3	7801-E	D5		
2884	D7	7801-F	D4		
2887	G10	7806	G5		
3709	D15	7807	E4		
3710	D15	7808	B10		
3800	B4	9802	D14		
3801	B4	MP812	B2		
3802	A4	MP813	A2		
3803	A4	MP814	A2		
3804	A4	MP815	E2		
3805	A4	MP816	B2		
3806	A4	MP817	C4		
3807	B4	MP818	D3		
3808	C4	MP820	D8		
3810	D4	MP821	B12		
3812	D4	MP826	B11		

Copper side view

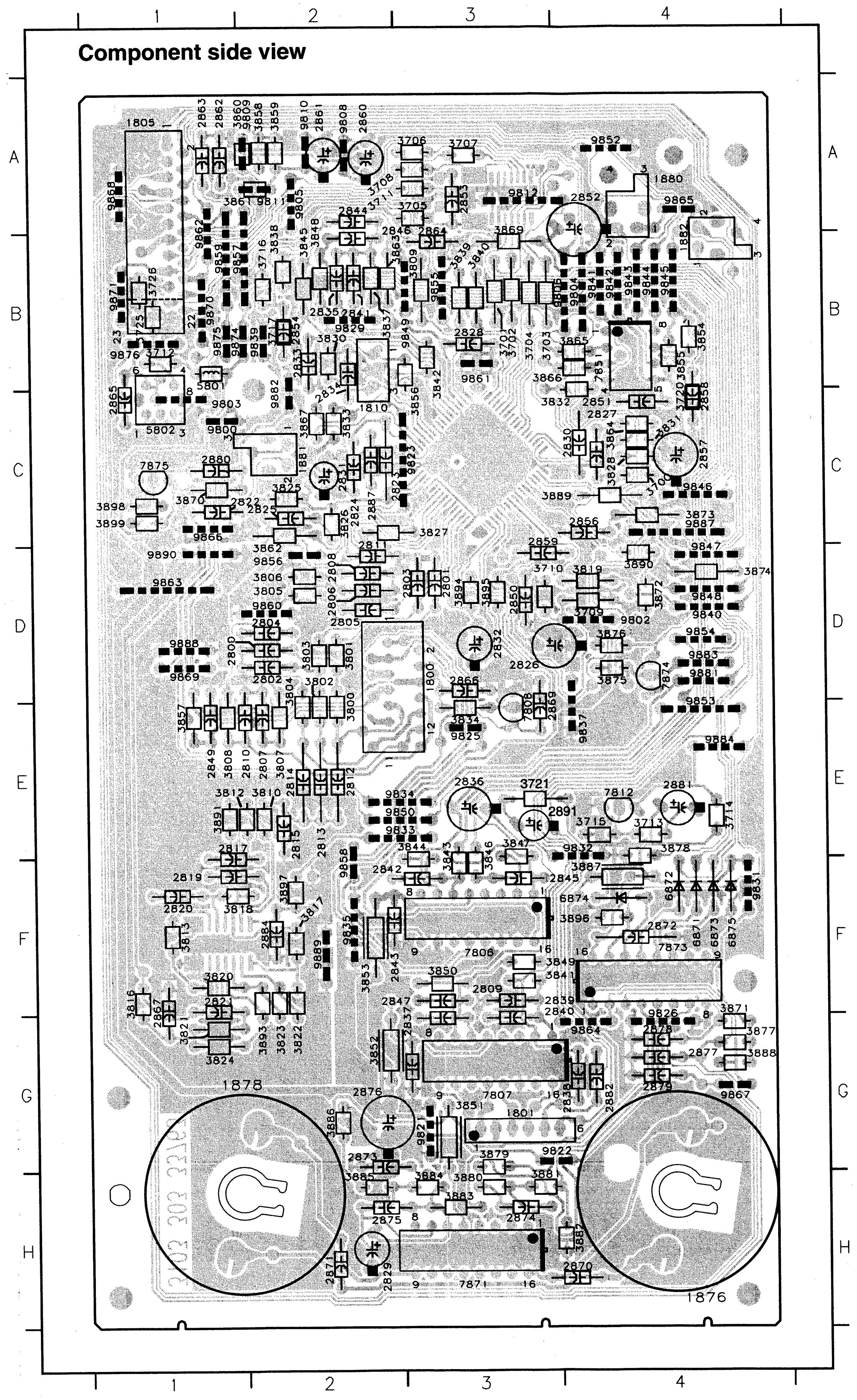


1800	E3
1801	H2
1805	B5
1810	C3
1876	I1
1878	I4
1880	B2
1881	C4
1882	B1
2800	D4
2801	D3
2802	E4
2803	D3
2804	D4
2805	D3
2806	D3
2807	E4
2808	D3
2809	G3
2810	E4
2811	D3
2812	F4
2813	F4
2814	F4
2815	F4
2817	F4
2819	F4
2820	F5
2821	G5
2822	D5
2823	C3
2824	C4
2825	D4
2826	D2
2827	C2
2828	B3
2829	I3
2830	C2
2831	C4
2832	E3
2833	B4
2834	C3
2835	B4
2836	F3
2837	H3
2838	H2
2839	G2
2840	G2
2841	B3
2842	F3
2843	G3
2844	B4
2845	F2
2846	B4
2847	G3
2849	E5
2850	D2
2851	C1
2852	A2
2853	A3
2854	B4
2856	D2
2857	C1
2858	C1
2859	D2
2860	A3
2861	A4
2862	A4
2863	A5
2864	B3
2865	C5
2866	E3
2867	G5
2869	E2
2870	I2
2871	I4
2872	G2
2873	H3
2874	I2
2875	I3
2876	H3
2877	G1
2878	G1
2879	H1
2880	C5
2881	F1
2882	H2
2884	G4
2887	C3
3700	C1
3701	B3
3702	B2
3703	B2
3704	B2
3705	A3
3706	A3
3707	A3
3708	A3
3709	D2
3710	D2
3711	A3
3712	B5
3713	F1
3714	F1
3715	F2
3716	B4
3717	B4
3720	C1
3725	B5
3726	B5
3800	E4
3801	E4
3802	E4
3803	E4
3804	E4
3805	D4
3806	D4
3807	E4
3808	E4
3809	B3
3810	F4
3812	F4
3813	G5
3816	G5
3817	G4
3818	F4
3819	D2
3820	G5
3821	G5
3822	G4
3823	G4
3824	G5
3825	C4
3826	D4
3827	D3
3828	C1
3830	B4
3831	C1
3832	C2
3833	C4
3834	E3
3837	B3
3838	B4
3839	B3
3840	B3
3841	G2
3842	B3
3843	F3
3844	F3
3845	B4
3846	F3
3847	F2
3848	B4
3849	G2
3850	G3
3851	H3
3852	G3
3853	G3
3854	B1
3855	B1
3856	C3
3857	E5
3858	A4
3859	A4
3860	A4
3861	A4
3862	D4
3863	B3
3864	C1
3865	B2
3866	C2
3867	C4
3869	B2
3870	C5
3871	G1
3872	D1
3873	D1
3874	D1
3875	E2
3876	E2
3877	G1
3878	F2
3879	H3
3880	H3
3881	H2
3882	I2
3883	I3
3884	H3
3885	H3
3886	H4
3887	F2
3888	H1
3889	C2
3890	D1
3891	F4
3893	G4
3894	D3
3895	D3
3896	G2
3897	F4
3898	D5
3899	D5
5801	B5
5802	C5
6871	F1
6872	F1
6873	F1
6874	F2
6875	F1
7806	G3
7807	H3
7808	E2
7812	F2
7851	B2
7871	I3
7873	G1
7874	E1
7875	C5
9800	C4
9802	D2
9803	C5
9804	B2
9805	A4
9806	B2
9808	A4
9809	A4
9810	A4
9811	A4
9812	A2
9821	H3
9822	H2
9823	C3
9825	E3
9826	G1
9829	B4
9831	F1
9832	F2
9833	F3
9834	F3
9835	G4
9837	E2
9839	B4
9840	D1
9841	B2
9842	B2
9843	B2
9844	B1
9845	B1
9846	C1
9847	D1
9848	D1
9849	B3
9850	F3
9852	A2
9853	E1
9854	D1
9855	B3
9856	D4
9857	B4
9858	F4
9859	B4
9860	D4
9861	B3
9862	B5
9863	D5
9864	G2
9865	A1
9866	D5
9867	H1
9868	A5
9869	E5
9870	B5
9871	B5
9874	B4
9875	B4
9876	B5
9881	E1
9882	C4
9883	E1
9884	E1
9887	D1
9888	E5
9889	G4
9890	D5

Component side view



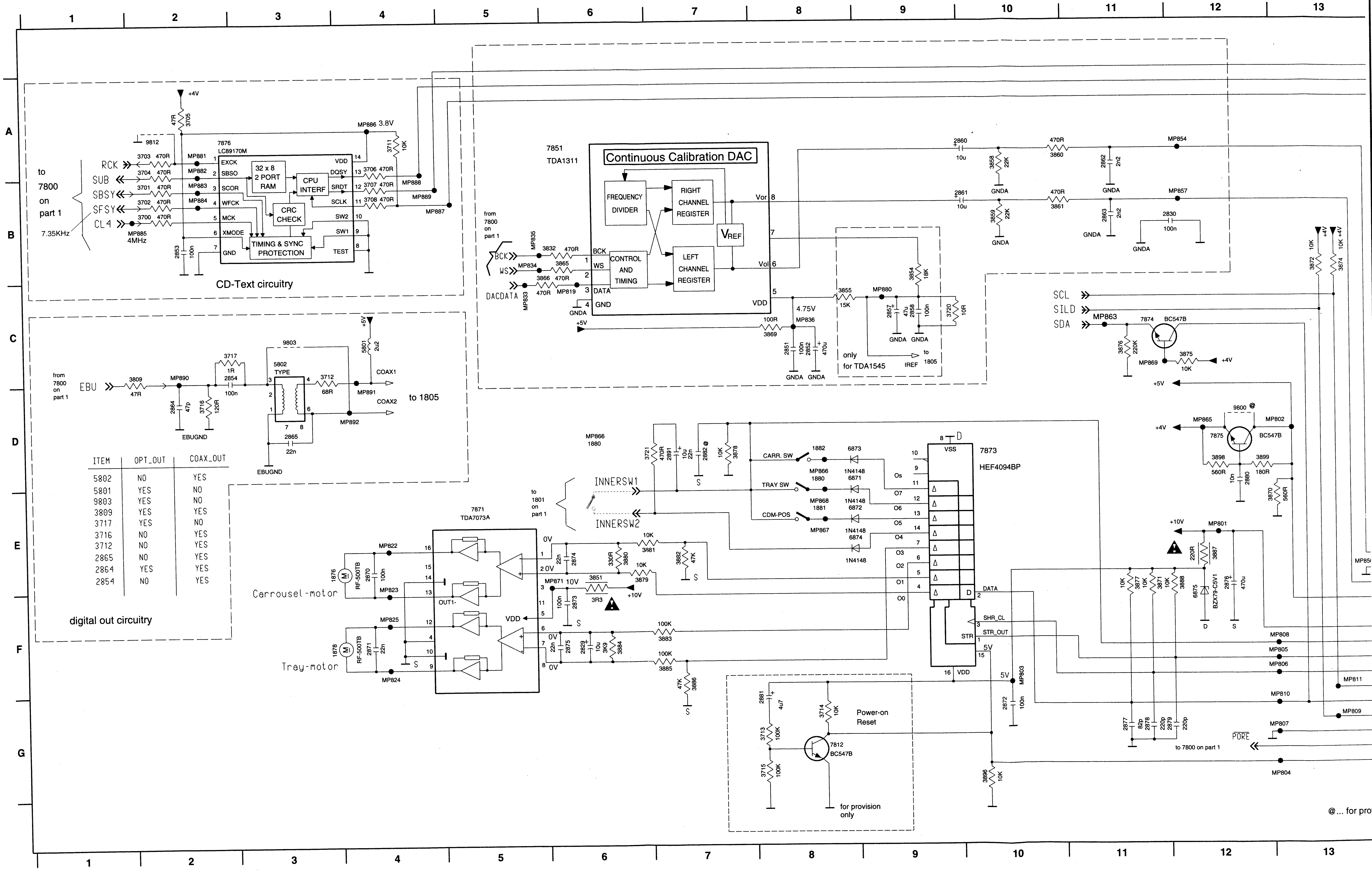
800	E3
801	H2
805	B5
810	C3
876	I1
878	I4
880	B2
881	C4
882	B1
800	D4
801	D3
802	E4
803	D3
804	D4
805	D3
806	D3
807	E4
808	D3
809	G3
810	E4
811	D3
812	F4
813	F4
814	F4
815	F4
817	F4
819	F4
820	F5
821	G5
822	D5
823	C3
824	C4
825	D4
826	D2
827	C2
828	B3
829	I3
830	C2
831	C4
832	E3
833	B4
834	C3
835	B4
836	F3
837	H3
838	H2
839	G2
840	G2
841	B3
842	F3
843	G3
844	B4
845	F2
846	B4
847	G3
849	E5
850	D2
851	C1
852	A2
853	A3
854	B4
856	D2
857	C1
858	C1
859	D2
860	A3
861	A4
862	A4
863	A5
864	B3
865	C5
866	E3
867	G5
2869	E2
2870	I2
2871	I4
2872	G2
2873	H3
2874	I2
2875	I3
2876	H3
2877	G1
2878	G1
2879	H1
2880	C5
2881	F1
2882	H2
2884	G4
2887	C3
3700	C1
3701	B3
3702	B2
3703	B2
3704	B2
3705	A3
3706	A3
3707	A3
3708	A3
3709	D2
3710	D2
3711	A3
3712	B5
3713	F1
3714	F1
3715	F2
3716	B4
3717	B4
3720	C1
3725	B5
3726	B5
3800	E4
3801	E4
3802	E4
3803	E4
3804	E4
3805	D4
3806	D4
3807	E4
3808	E4
3809	B3
3810	F4
3812	F4
3813	G5
3816	G5
3817	G4
3818	F4
3819	D2
3820	G5
3821	G5
3822	G4
3823	G4
3824	G5
3825	C4
3826	D4
3827	D3
3828	C1
3830	B4
3831	C1
3832	C2
3833	C4
3834	E3
3837	B3
3838	B4
3839	B3
3840	B3
3841	G2
3842	B3
3843	F3
3844	F3
3845	B4
3846	F3
3847	F2
3848	B4
3849	G2
3850	G3
3851	H3
3852	G3
3853	G3
3854	B1
3855	B1
3856	C3
3857	E5
3858	A4
3859	A4
3860	A4
3861	A4
3862	D4
3863	B3
3864	C1
3865	B2
3866	C2
3867	C4
3869	B2
3870	C5
3871	G1
3872	D1
3873	D1
3874	D1
3875	E2
3876	E2
3877	G1
3878	F2
3879	H3
3880	H3
3881	H2
3882	I2
3883	I3
3884	H3
3885	H3
3886	H4
3887	F2
3888	H1
3889	C2
3890	D1
3891	F4
3893	G4
3894	D3
3895	D3
3896	G2
3897	F4
3898	D5
3899	D5
5801	B5
5802	C5
6871	F1
6872	F1
6873	F1
6874	F2
6875	F1
7806	G3
7807	H3
7808	E2
7812	F2
7851	B2
7871	I3
7873	G1
7874	E1
7875	C5
9800	C4
9802	D2
9803	C5
9804	B2
9805	A4
9806	B2
9808	A4
9809	A4
9810	A4
9811	A4
9812	A2
9821	H3
9822	H2
9823	C3
9825	E3
9826	G1
9829	B4
9831	F1
9832	F2
9833	F3
9834	F3
9835	G4
9837	E2
9839	B4
9840	D1
9841	B2
9842	B2
9843	B2
9844	B1
9845	B1
9846	C1
9847	D1
9848	D1
9849	B3
9850	F3
9852	A2
9853	E1
9854	D1
9855	B3
9856	D4
9857	B4
9858	F4
9859	B4
9860	D4
9861	B3
9862	B5
9863	D5
9864	G2
9865	A1
9866	D5
9867	H1
9868	A5
9869	E5
9870	B5
9871	B5
9874	B4
9875	B4
9876	B5
9881	E1
9882	C4
9883	E1
9884	E1
9887	D1
9888	E5
9889	G4
9890	D5



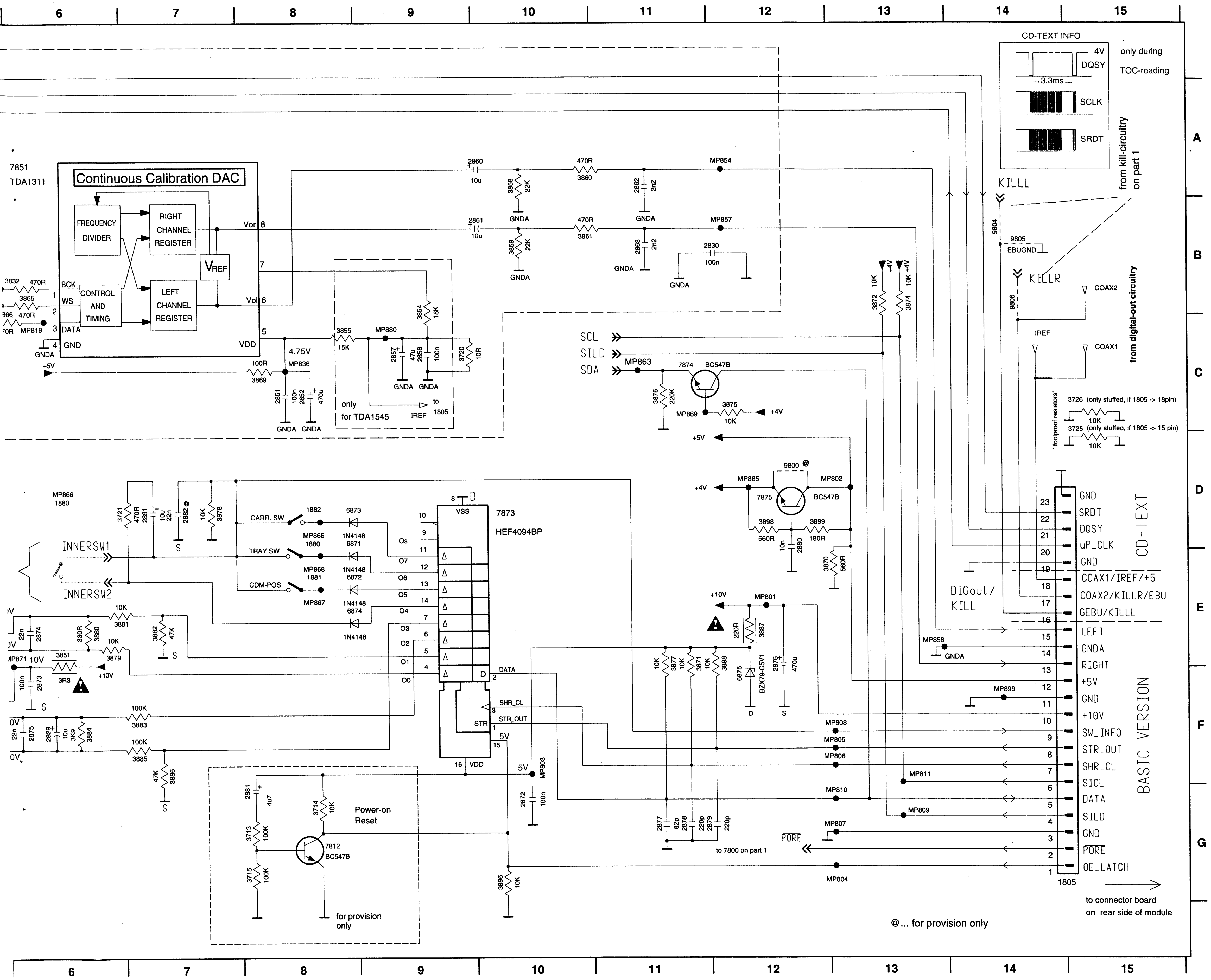
Component side view

1800	D3
1801	G3
1805	A1
1810	B2
1876	H4
1878	H1
1880	B4
1881	C2
1882	B4
2800	D2
2801	D3
2802	D2
2803	D3
2804	D2
2805	D2
2806	D2
2807	E2
2808	D2
2809	F3
2810	E2
2811	D2
2812	E2
2813	E2
2814	E2
2815	E2
2817	F1
2819	F1
2820	F1
2821	G1
2822	C1
2823	C2
2824	C2
2825	C2
2826	D3
2827	C4
2828	B3
2829	H2
2830	C4
2831	C2
2832	D3
2833	B2
2834	B2
2835	B2
2836	E3
2837	G2
2838	G4
2839	F3
2840	F3
2841	B2
2842	F3
2843	F2
2844	B2
2845	F3
2846	B2
2847	F3
2849	E1
2850	D3
2851	C4
2852	A4
2853	A3
2854	B2
2856	C4
2857	C4
2858	C4
2859	C3
2860	A2
2861	A2
2862	A1
2863	A1
2864	B3
2865	C1
2866	E3
2867	F1
2869	E3
2870	H4
2871	H2
2872	F4
2873	G2
2874	H3
2875	H2
2876	G3
2877	G4
2878	G4
2879	G4
2880	C1
2881	E4
2882	G4
2884	F2
2887	C2
3700	C4
3701	B3
3702	B3
3703	B3
3704	B3
3705	A3
3706	A3
3707	A3
3708	A3
3709	D4
3710	D3
3711	A3
3712	B1
3713	E4
3714	E4
3715	E4
3716	B2
3717	B2
3720	C4
3725	B1
3726	B1
3800	E2
3801	D2
3802	E2
3803	D2
3804	E2
3805	D2
3806	D2
3807	E2
3808	E1
3809	B3
3810	E2
3812	E2
3813	F1
3816	F1
3817	F2
3818	F1
3819	D4
3820	F1
3821	G1
3822	F2
3823	F2
3824	G1
3825	C2
3826	C2
3827	C2
3828	C4
3830	B2
3831	C4
3832	C4
3833	C2
3834	E3
3837	B2
3838	B2
3839	B3
3840	B3
3841	F3
3842	B3
3843	F3
3844	F3
3845	B2
3846	F3
3847	E3
3848	B2
3849	F3
3850	F3
3851	G3
3852	G2
3853	F2
3854	B4
3855	B4
3856	B3
3857	E1
3858	A2
3859	A2
3860	A2
3861	A2
3862	C2
3863	B2
3864	C4
3865	B4
3866	B4
3867	C2
3869	B3
3870	C1
3871	G4
3872	D4
3873	C4
3874	D4
3875	D4
3876	D4
3877	G4
3878	E4
3879	G3
3880	H3
3881	H3
3882	H4
3883	H3
3884	H3
3885	H2
3886	G2
3887	F4
3888	G4
3889	C4
3890	D4
3891	E1
3893	F2
3894	D3
3895	D3
3896	F4
3897	F2
3898	C1
3899	C1
5801	B1
5802	C1
6871	F4
6872	F4
6873	F4
6874	F4
6875	F4
7806	F3
7807	G3
7808	E3
7812	E4
7851	B4
7871	H3
7873	F4
7874	D4
7875	C1
9800	C1
9802	D4
9803	C1
9804	B4
9805	A2
9806	B4
9808	A2
9809	A2
9810	A2
9811	A2
9812	A3
9821	G3
9822	G3
9823	C3
9825	E3
9826	G4
9829	B2
9831	F4
9832	E4
9833	E2
9834	E2
9835	F2
9837	E4
9839	B2
9840	D4
9841	B4
9842	B4
9843	B4
9844	B4
9845	B4
9846	C4
9847	D4
9848	D4
9849	B3
9850	E2
9852	A4
9853	E4
9854	D4
9855	B3
9856	D2
9857	B2
9858	F2
9859	B1
9860	D2
9861	B3
9862	A1
9863	D1
9864	G4
9865	A4
9866	C1
9867	G4
9868	A1
9869	D1
9870	B1
9871	B1
9874	B2
9875	B1
9876	B1
9881	D4
9882	C2
9883	D4
9884	E4
9887	C4
9888	D1
9889	F2
9890	D1

Circuit Diagram Main Board part2

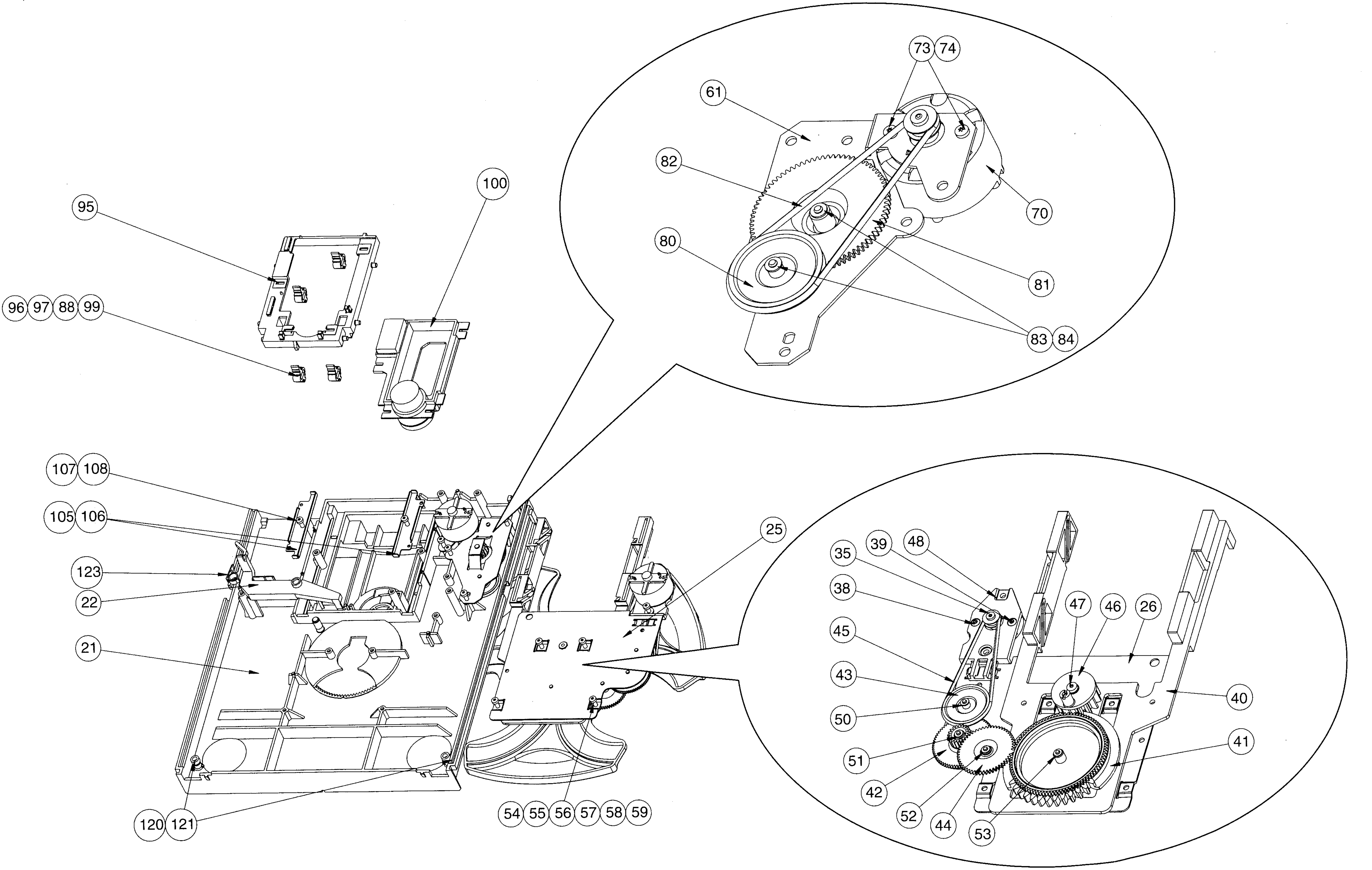

CD-Text circuitry
7876
LC89170M
32 x 8 2 PORT RAM
CPU INTERF
CRC CHECK
TIMING & SYNC PROTECTION
to 7800 on part 1
RCK
SUB
SBSY
SFSY
CL4
7.35KHz
MP885 4MHz
MP886 3.8V
7851
TDA1311
Continuous Calibration DAC
FREQUENCY DIVIDER
RIGHT CHANNEL REGISTER
LEFT CHANNEL REGISTER
CONTROL AND TIMING
VREF
from 7800 on part 1
BCK
WS
DACDATA
only for TDA1545
to 1805
SCL
SILD
SDA
7874 BC547B
7875 BC547B
digital out circuitry
from 7800 on part 1
EBU
5802 TYPE
COAX1
COAX2
to 1805
EBUGND
7871
TDA7073A
Carrousel-motor
Tray-motor
RF-500TB
to 1801 on part 1
INNERSW1
INNERSW2
CARR. SW
TRAY SW
CDM-POS
7873
HEF4094BP
DATA
SHR_CL
STR_OUT
7812 BC547B
Power-on Reset
for provision only
BZX79-C5V1
to 7800 on part 1
PORE
@... for pro

ITEM	OPT_OUT	COAX_OUT
5802	NO	YES
5801	YES	NO
9803	YES	NO
3809	YES	YES
3717	YES	NO
3716	NO	YES
3712	NO	YES
2865	NO	YES
2864	YES	YES
2854	NO	YES


7851
TDA1311
Continuous Calibration DAC
FREQUENCY DIVIDER
RIGHT CHANNEL REGISTER
LEFT CHANNEL REGISTER
CONTROL AND TIMING
VREF
BCK
WS
DATA
GND
VDD
Vor
Vol
4.75V
MP836
MP880
MP819
only for TDA1545
IREF
to 1805
MP854
MP857
GNDA
CD-TEXT INFO
4V
DQSY
SCLK
SRDT
3.3ms
only during TOC-reading
from kill-circuitry on part 1
KILLL
KILLR
EBUGND
COAX1
COAX2
from digital-out circuitry
'foolproof resistors'
3726 (only stuffed, if 1805 -> 18pin)
3725 (only stuffed, if 1805 -> 15 pin)
SCL
SILD
SDA
MP863
7874 BC547B
7875 BC547B
MP869
MP865
MP802
9800 @
MP801
BZX79-C5V1
7873
HEF4094BP
VSS
VDD
DATA
SHR_CL
STR_OUT
STR
CARR. SW
TRAY SW
CDM-POS
INNERSW1
INNERSW2
1N4148
MP866
MP867
MP868
MP871
Power-on Reset
7812 BC547B
for provision only
MP803
MP804
MP807
MP808
MP805
MP806
MP810
MP809
MP811
MP856
MP899
PORE
to 7800 on part 1
DIGout / KILL
GND
SRDT
DQSY
uP_CLK
GND
COAX1/IREF/+5
COAX2/KILLR/EBU
GEBU/KILLL
LEFT
GNDA
RIGHT
+5V
GND
+10V
SW_INFO
STR_OUT
SHR_CL
SICL
DATA
SILD
GND
PORE
OE_LATCH
CD-TEXT
BASIC VERSION
1805
to connector board on rear side of module
@... for provision only
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G

1805	G14
1876	E3
1878	F3
1880	D8
1881	E8
1882	D8
2829	F6
2830	B12
2851	C8
2852	C8
2853	B2
2854	C2
2857	C9
2858	C9
2860	A10
2861	B10
2862	A11
2863	B11
2864	D2
2865	D3
2870	E4
2871	F4
2872	G10
2873	F6
2874	E6
2875	F6
2876	E12
2877	G11
2878	G11
2879	G11
2880	D12
2881	G8
2882	D7
3700	B2
3701	B2
3702	B2
3703	A2
3704	A2
3705	A2
3706	A4
3707	B4
3708	B4
3711	A4
3712	C3
3713	G8
3714	G8
3715	G8
3716	D2
3717	C2
3720	C9
3725	D15
3726	C15
3809	C2
3832	B6
3851	E6
3854	B9
3855	C8
3858	A10
3859	B10
3860	A10
3861	B10
3865	B6
3866	C6
3869	C8
3870	E12
3871	E11
3872	B13
3874	B13
3875	C12
3876	C11
3877	E11
3878	D7
3879	E6
3880	E6
3881	E6
3882	E7
3883	F7
3884	F6
3885	F7
3886	F7
3887	E12
3888	E12
3896	G10
3898	D12
3899	D12
5801	C4
5802	C3
6871	D8
6872	E8
6873	D8
6874	E8
6875	F12
7812	G8
7851	A6
7871	E5
7873	D10
7874	C11
7875	D12
7876	A2
9800	D12
9803	C3
9804	B14
9805	B14
9806	B14
9808	A10
9809	A10
9810	B10
9811	B10
9812	A2
MP801	E12
MP802	D13
MP803	F10
MP804	G13
MP805	F13
MP806	F13
MP807	G13
MP808	F13
MP809	G13
MP810	G13
MP811	F13
MP819	C6
MP822	E4
MP823	E4
MP824	F4
MP825	F4
MP833	C5
MP834	B5
MP835	B5
MP836	C8
MP854	A12
MP856	E13
MP857	B12
MP863	C11
MP865	D12
MP866	D8
MP867	E8
MP868	E8
MP869	C11
MP871	E6
MP880	C9
MP881	A2
MP882	A2
MP883	B2
MP884	B2
MP885	B2
MP886	A4
MP887	B4
MP888	B4
MP889	B4
MP890	C2
MP891	D4
MP892	D4
MP899	F14

EXPLODED VIEW (3CDC MODULE)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100
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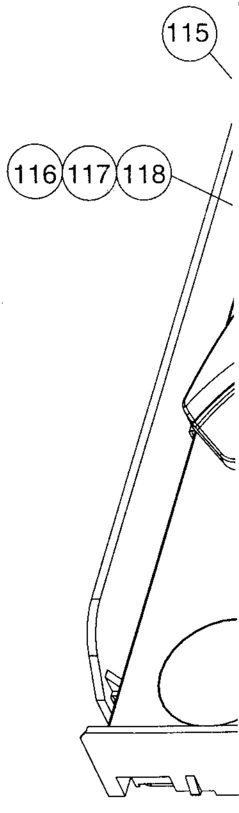
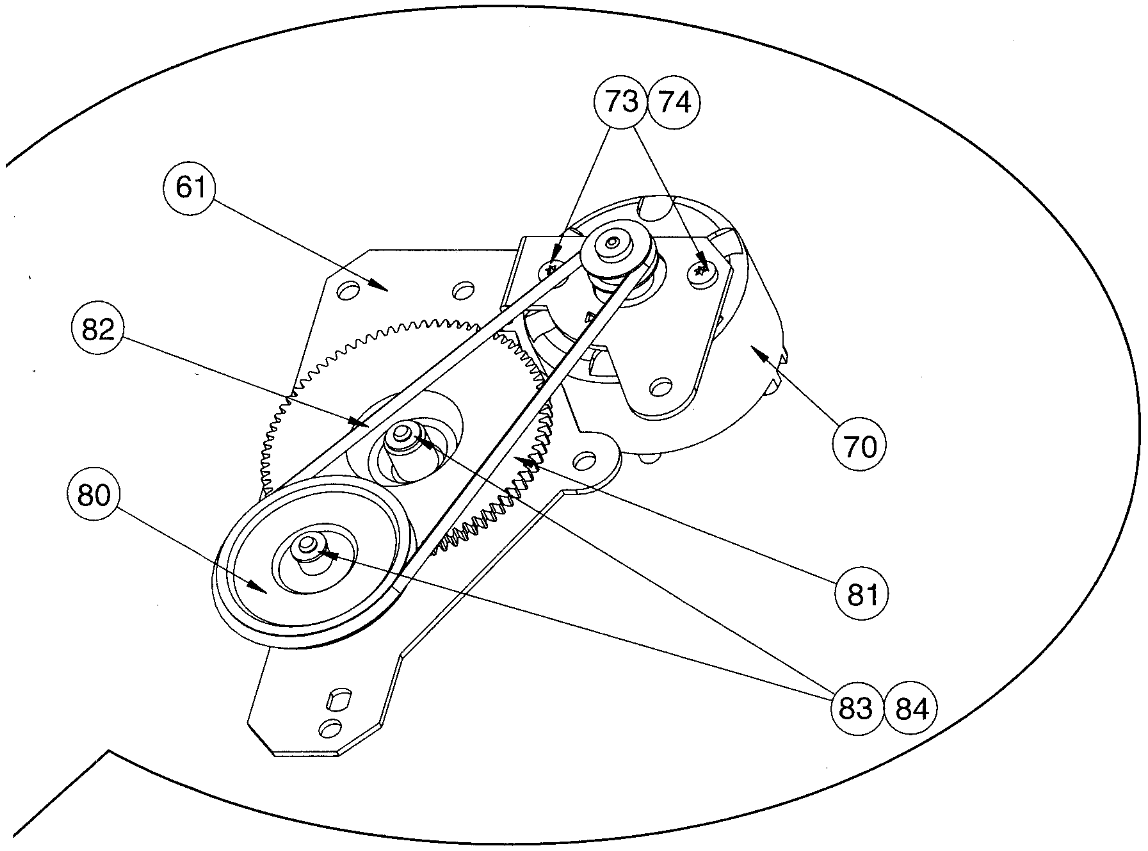

115
116
117
118

MECHANICAL PARTS

	4822 390 1013
3	4822 463 1100
4	4822 463 1100
21	4822 441 1161
22	4822 402 1008
38	4822 502 1254
39	4822 502 1254
40	4822 463 1101
41	4822 522 1050
42	4822 522 1049


73
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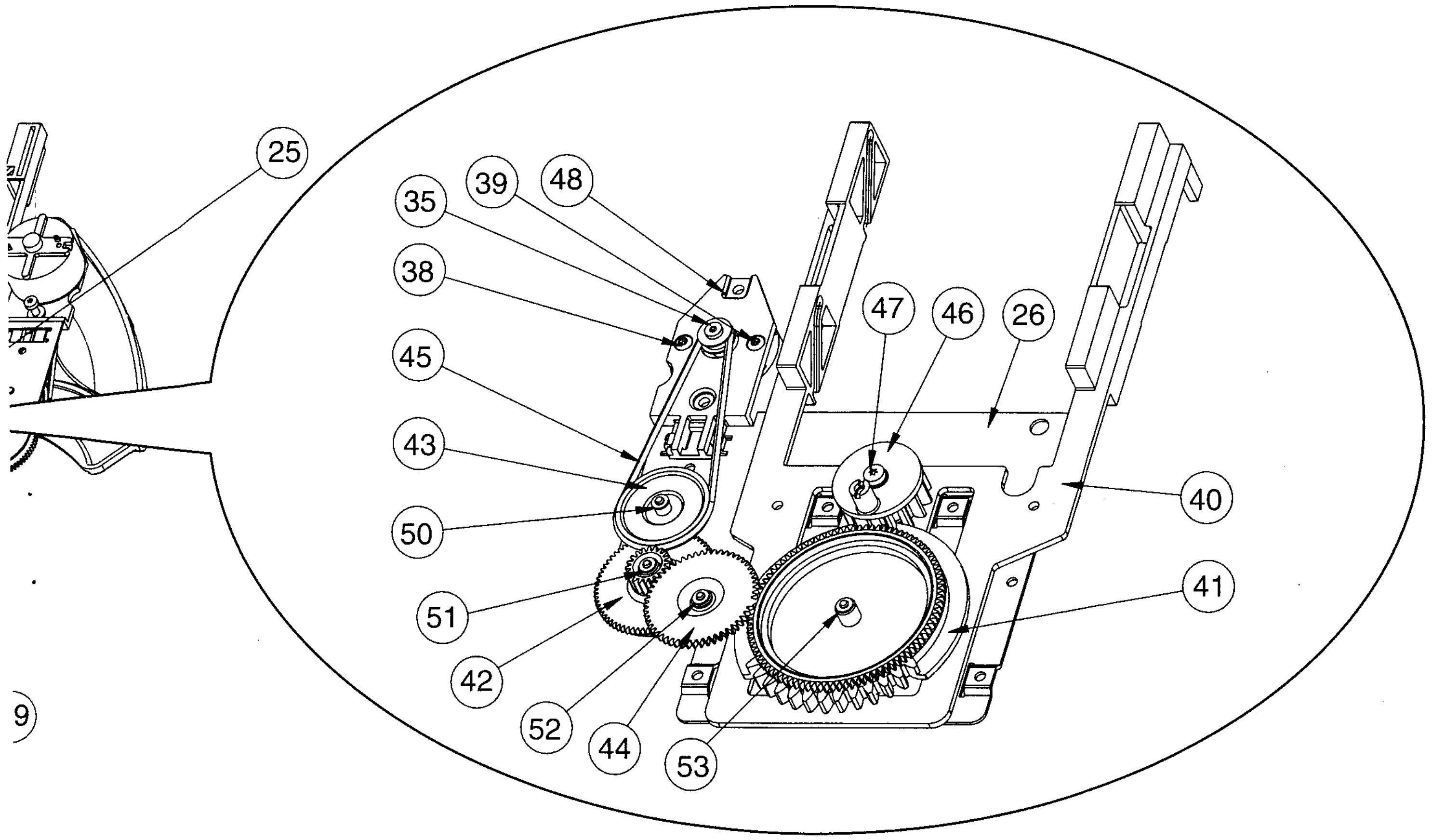
80
81
83
84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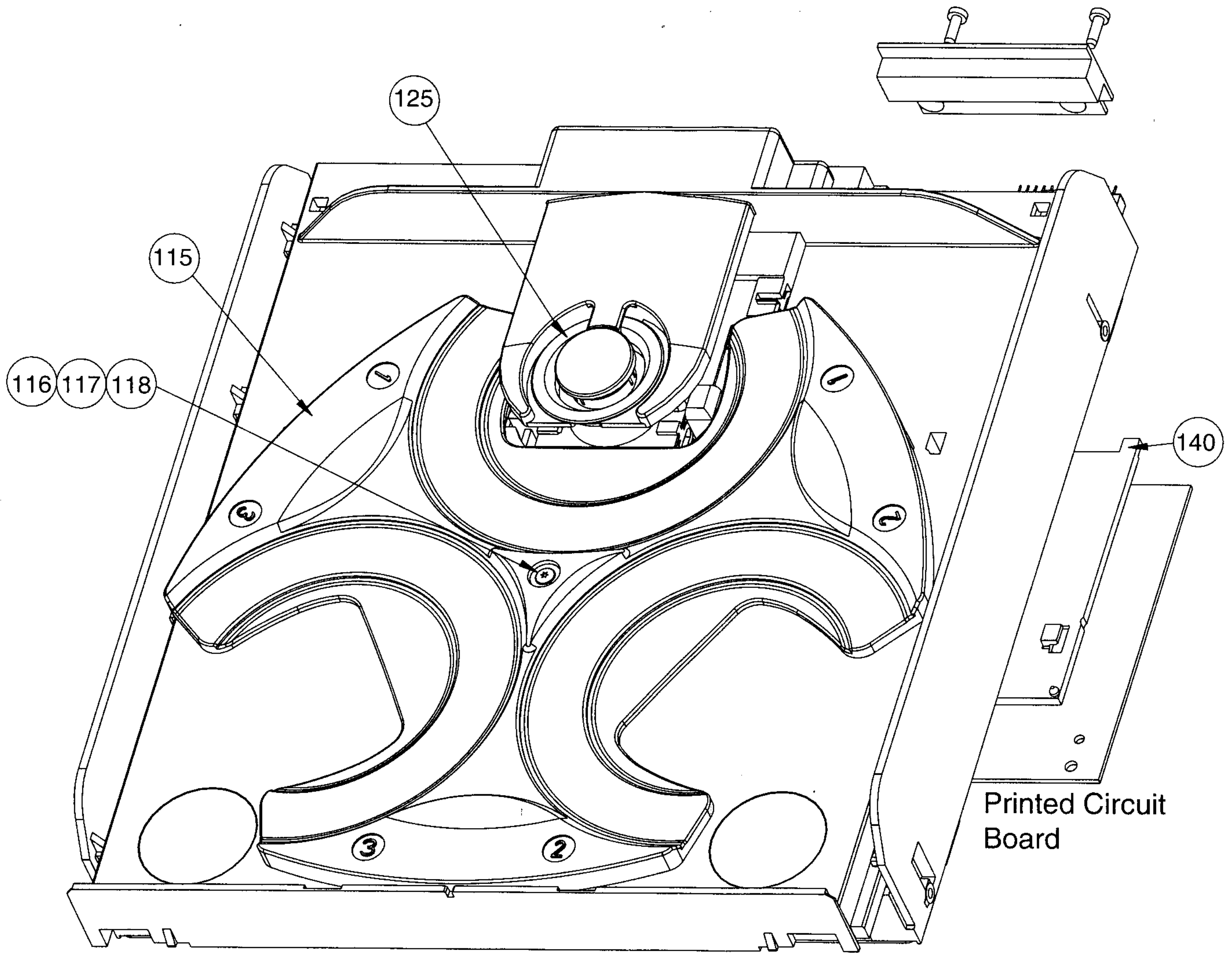
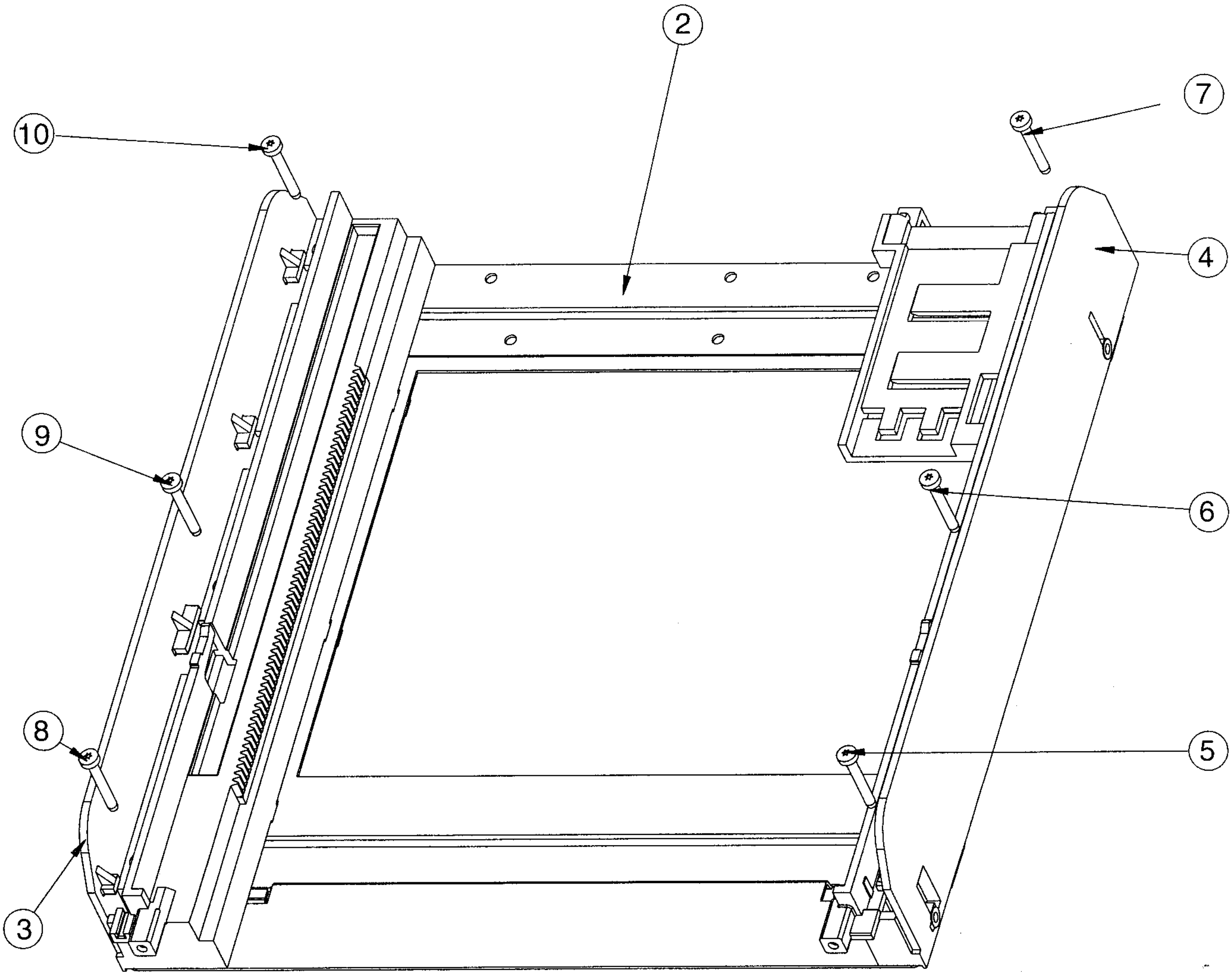
9)


125
115
116
117
118
140
Printed Circuit Board

MECHANICAL PARTSLIST 3CDC MODULE

	4822 390 10136	POLYLUB GLY801 (GREASE)	43	4822 528 10937	PULLEY
3	4822 463 11008	GUIDE LEFT	44	4822 522 10493	IDLER WHEEL
4	4822 463 11009	GUIDE RIGHT	45	4822 358 10115	BELT
21	4822 441 11615	DRAWER	46	4822 466 10735	ECCENTRIC GEAR WHEEL
22	4822 402 10088	BRACKET TUMBLER	50	4822 532 12364	WASHER
38	4822 502 12548	SCREW M2,6X3,5	51	4822 532 12364	WASHER
39	4822 502 12548	SCREW M2,6X3,5	52	4822 532 12364	WASHER
40	4822 463 11011	SLIDE	53	4822 532 12364	WASHER
41	4822 522 10509	CONTROL DISC	35	4822 361 10753	CARROUSEL MOTOR
42	4822 522 10492	GEAR WHEEL	70	4822 361 10753	CARROUSEL MOTOR



MECHANICAL PARTSLIST 3CDC MODULE

73	4822 502 12548	SCREW M2,6X3,5	98	4822 325 50215	SUSPENSION
74	4822 502 12548	SCREW M2,6X3,5	99	4822 325 50215	SUSPENSION
80	4822 528 10937	PULLEY	100	4822 691 10615	CD DRIVE VAM1201
81	4822 522 10494	GEAR DRAWER	115	4822 466 10736	CARROUSEL
82	4822 358 10115	BELT	117	4822 532 12365	BUSH DRAWER
83	4822 532 12364	WASHER	120	4822 532 51756	GROMMET
84	4822 532 12364	WASHER	121	4822 532 51756	GROMMET
95	4822 404 10894	SUPPORT	123	4822 402 10085	SWITCH BRACKET
96	4822 325 50215	SUSPENSION	125	4822 401 11708	DISC CLAMP
97	4822 325 50215	SUSPENSION	140	4822 466 10734	PLATE

ELECTRICAL PARTSLIST 3CDC MODULE

MISCELLANEOUS

100	4822 691 10615	CD DRIVE VAM1201
1800	4822 267 51453	FLEX FOIL CONNECTOR 12P
1805	4822 265 10979	FLEX FOIL CONNECTOR 15P
1806	4822 265 10981	FLEX FOIL CONNECTOR 15P
1880	4822 276 13503	SWITCH
1881	4822 276 13503	SWITCH
1882	4822 276 13503	SWITCH

CAPACITORS

2800	4822 126 10053	180pF	10%	50V
2801	4822 122 10466	220pF	10%	50V
2802	4822 126 10053	180pF	10%	50V
2803	4822 122 10466	220pF	10%	50V
2804	4822 126 12787	330pF	10%	50V
2805	4822 122 10466	220pF	10%	50V
2806	4822 122 10466	220pF	10%	50V
2807	4822 126 12878	1,5nF	10%	16V
2808	4822 122 10466	220pF	10%	50V
2809	4822 126 12882	100nF	20%	50V
2810	4822 122 10459	560pF	10%	50V
2811	4822 122 10466	220pF	10%	50V
2812	4822 122 10319	82pF	5%	50V
2813	4822 122 10319	82pF	5%	50V
2814	4822 122 33849	150pF	10%	50V
2815	4822 122 33192	27pF	5%	50V
2817	4822 122 33849	150pF	10%	50V
2819	4822 122 33848	47pF	5%	50V
2820	4822 122 33848	47pF	5%	50V
2821	4822 122 10462	15pF	5%	50V
2822	4822 126 12339	2,2nF	10%	16V
2823	4822 122 33848	47pF	5%	50V
2824	4822 126 11585	22nF	20%	50V
2825	4822 126 12882	100nF	20%	50V
2826	4822 124 23624	470µF	20%	16V
2827	4822 126 12882	100nF	20%	50V
2828	4822 126 12882	100nF	20%	50V
2829	4822 124 41579	10µF	20%	50V
2830	4822 126 12882	100nF	20%	50V
2831	4822 124 41972	4,7µF	20%	50V
2832	4822 124 12032	4,7µF	20%	50V
2835	4822 126 12882	100nF	20%	50V
2837	4822 126 12882	100nF	20%	50V
2838	4822 126 12882	100nF	20%	50V
2839	4822 126 12882	100nF	20%	50V
2840	4822 126 12882	100nF	20%	50V
2841	4822 122 10574	1,2nF	10%	16V
2842	4822 121 51387	10nF	20%	16V
2843	4822 126 12882	100nF	20%	50V
2844	4822 122 10574	1,2nF	10%	16V
2845	4822 121 51387	10nF	20%	16V
2846	4822 126 11585	22nF	20%	50V
2847	4822 126 12882	100nF	20%	50V
2849	4822 126 11585	22nF	20%	50V
2850	4822 122 33197	1nF	10%	50V
2851	4822 126 12882	100nF	20%	50V
2852	4822 124 80857	470µF	20%	16V
2856	4822 122 33848	47pF	5%	50V
2859	4822 126 12882	100nF	20%	50V
2860	4822 124 41579	10µF	20%	50V
2861	4822 124 41579	10µF	20%	50V
2862	4822 126 12339	2,2nF	10%	16V
2863	4822 126 12339	2,2nF	10%	16V
2866	4822 126 12882	100nF	20%	50V
2867	4822 122 33848	47pF	5%	50V

CAPACITORS

2868	4822 126 12882	100nF	20%	50V
2869	4822 126 12882	100nF	20%	50V
2870	4822 126 12882	100nF	20%	50V
2871	4822 126 11585	22nF	20%	50V
2872	4822 126 12882	100nF	20%	50V
2873	4822 126 12882	100nF	20%	50V
2874	4822 126 11585	22nF	20%	50V
2875	4822 126 11585	22nF	20%	50V
2876	4822 124 80857	470µF	20%	16V
2877	4822 122 10319	82pF	5%	50V
2878	4822 122 10466	220pF	10%	50V
2879	4822 122 10466	220pF	10%	50V
2880	4822 121 51387	10nF	20%	16V
2884	4822 126 12882	100nF	20%	50V
2887	4822 126 12882	100nF	20%	50V
2891	4822 124 23179	10µF	20%	16V

RESISTORS

3703	4822 116 83883	470Ω	5%	0,16W
3720	4822 116 52176	10Ω	5%	0,5W
3721	4822 116 83883	470Ω	5%	0,5W
3725	4822 116 83864	10kΩ	5%	0,5W
3726	4822 116 83864	10kΩ	5%	0,5W
3800	4822 116 52239	120kΩ	5%	0,5W
3801	4822 116 83864	10kΩ	5%	0,5W
3802	4822 116 52239	120kΩ	5%	0,5W
3803	4822 116 83864	10kΩ	5%	0,5W
3804	4822 116 52291	56kΩ	5%	0,5W
3805	4822 116 83864	10kΩ	5%	0,5W
3806	4822 116 83864	10kΩ	5%	0,5W
3807	4822 116 83864	10kΩ	5%	0,5W
3808	4822 116 83864	10kΩ	5%	0,5W
3810	4822 050 11002	1kΩ	5%	0,2W
3812	4822 116 83884	47kΩ	5%	0,16W
3813	4822 116 83864	10kΩ	5%	0,5W
3816	4822 116 52269	3,3kΩ	5%	0,5W
3817	4822 116 83961	6,8kΩ	5%	0,16W
3818	4822 116 83864	10kΩ	5%	0,5W
3819	4822 116 83883	470Ω	5%	0,16W
3820	4822 116 52269	3,3kΩ	5%	0,5W
3821	4822 116 52269	3,3kΩ	5%	0,5W
3822	4822 116 52257	22kΩ	5%	0,5W
3823	4822 116 52269	3,3kΩ	5%	0,5W
3824	4822 116 52269	3,3kΩ	5%	0,5W
3825	4822 050 11002	1kΩ	5%	0,2W
3826	4822 116 52257	22kΩ	5%	0,5W
3827	4822 116 52278	390kΩ	5%	0,5W
3828	4822 116 52257	22kΩ	5%	0,5W
3830	4822 116 52235	1MΩ	5%	0,5W
3831	4822 116 52257	22kΩ	5%	0,5W
3832	4822 116 83883	470Ω	5%	0,16W
3833	4822 116 83864	10kΩ	5%	0,5W
3834	4822 116 52283	4,7kΩ	5%	0,5W
3837	4822 050 11002	1kΩ	5%	0,2W
3838	4822 050 11002	1kΩ	5%	0,2W
3839	4822 116 52245	150kΩ	5%	0,16W
3840	4822 116 52245	150kΩ	5%	0,16W
3841	4822 116 83961	6,8kΩ	5%	0,16W
3842	4822 116 83864	10kΩ	5%	0,5W
3843	4822 116 52303	8,2kΩ	5%	0,5W
3844	4822 116 83883	470Ω	5%	0,16W
3845	4822 116 83864	10kΩ	5%	0,5W
3846	4822 116 52303	8,2kΩ	5%	0,5W

ELECTRICAL PARTSLIST 3CDC MODULE

RESISTORS

3847	4822 116 83883	470Ω	5%	0,16W
3848	4822 116 52303	8,2kΩ	5%	0,5W
3849	4822 116 52303	8,2kΩ	5%	0,5W
3850	4822 116 83883	470Ω	5%	0,16W
3851	4822 052 10338	3,3Ω		NFR25
3852	4822 052 10338	3,3Ω		NFR25
3853	4822 052 10338	3,3Ω		NFR25
3856	4822 116 80176	1Ω	5%	0,5W
3857	4822 050 11002	1kΩ	5%	0,2W
3858	4822 116 52257	22kΩ	5%	0,5W
3859	4822 116 52257	22kΩ	5%	0,5W
3860	4822 116 83883	470Ω	5%	0,16W
3861	4822 116 83883	470Ω	5%	0,16W
3862	4822 116 52175	100Ω	5%	0,5W
3863	4822 116 52175	100Ω	5%	0,5W
3864	4822 116 52175	100Ω	5%	0,5W
3865	4822 116 83883	470Ω	5%	0,16W
3866	4822 116 83883	470Ω	5%	0,16W
3867	4822 116 52234	100kΩ	5%	0,5W
3869	4822 116 52175	100Ω	5%	0,5W
3870	4822 116 52226	560Ω	5%	0,5W
3871	4822 116 83864	10kΩ	5%	0,5W
3872	4822 116 83864	10kΩ	5%	0,5W
3873	4822 116 83883	470Ω	5%	0,16W
3874	4822 116 83864	10kΩ	5%	0,5W
3875	4822 116 83864	10kΩ	5%	0,5W
3876	4822 116 83874	220kΩ	5%	0,5W
3877	4822 116 83864	10kΩ	5%	0,5W
3878	4822 116 83864	10kΩ	5%	0,5W
3879	4822 116 83864	10kΩ	5%	0,5W
3880	4822 116 52219	330Ω	5%	0,5W
3881	4822 116 83864	10kΩ	5%	0,5W
3882	4822 116 83884	47kΩ	5%	0,16W
3883	4822 116 52234	100kΩ	5%	0,5W
3884	4822 116 52276	3,9kΩ	5%	0,5W
3885	4822 116 52234	100kΩ	5%	0,5W
3886	4822 116 83884	47kΩ	5%	0,16W
3887	4822 052 10221	220Ω	5%	
3888	4822 116 83864	10kΩ	5%	0,5W
3889	4822 116 83883	470Ω	5%	0,16W
3890	4822 116 83883	470Ω	5%	0,16W
3891	4822 116 52272	330kΩ	5%	0,5W
3893	4822 116 52257	22kΩ	5%	0,5W
3894	4822 116 52191	33Ω	5%	0,5W
3895	4822 116 52176	10Ω	5%	0,5W
3896	4822 116 83864	10kΩ	5%	0,5W
3897	4822 116 52226	560Ω	5%	0,5W
3898	4822 116 52226	560Ω	5%	0,5W
3899	4822 116 52213	180Ω	5%	0,5W

COILS

1810	4822 242 73557	CERAMIC RES. 8,46MHz

DIODES

6871	4822 130 30621	1N4148
6872	4822 130 30621	1N4148
6873	4822 130 30621	1N4148
6874	4822 130 30621	1N4148
6875	4822 130 34233	BZX79-B5V1

TRANSISTORS

7808	4822 130 41344	BC337-40
7874	4822 130 40959	BC547B
7875	4822 130 40959	BC547B

INTEGRATED CIRCUITS

7800 ©	4822 209 12752	SAA7378GP
7801 ©	5322 209 11517	PC74HCU04T
7806	4822 209 32852	TDA7073A/N2
7807	4822 209 32852	TDA7073A/N2
7851	4822 209 32421	TDA1311A/N2
7871	4822 209 32852	TDA7073A/N2
7873	5322 209 10421	HEF4094BP

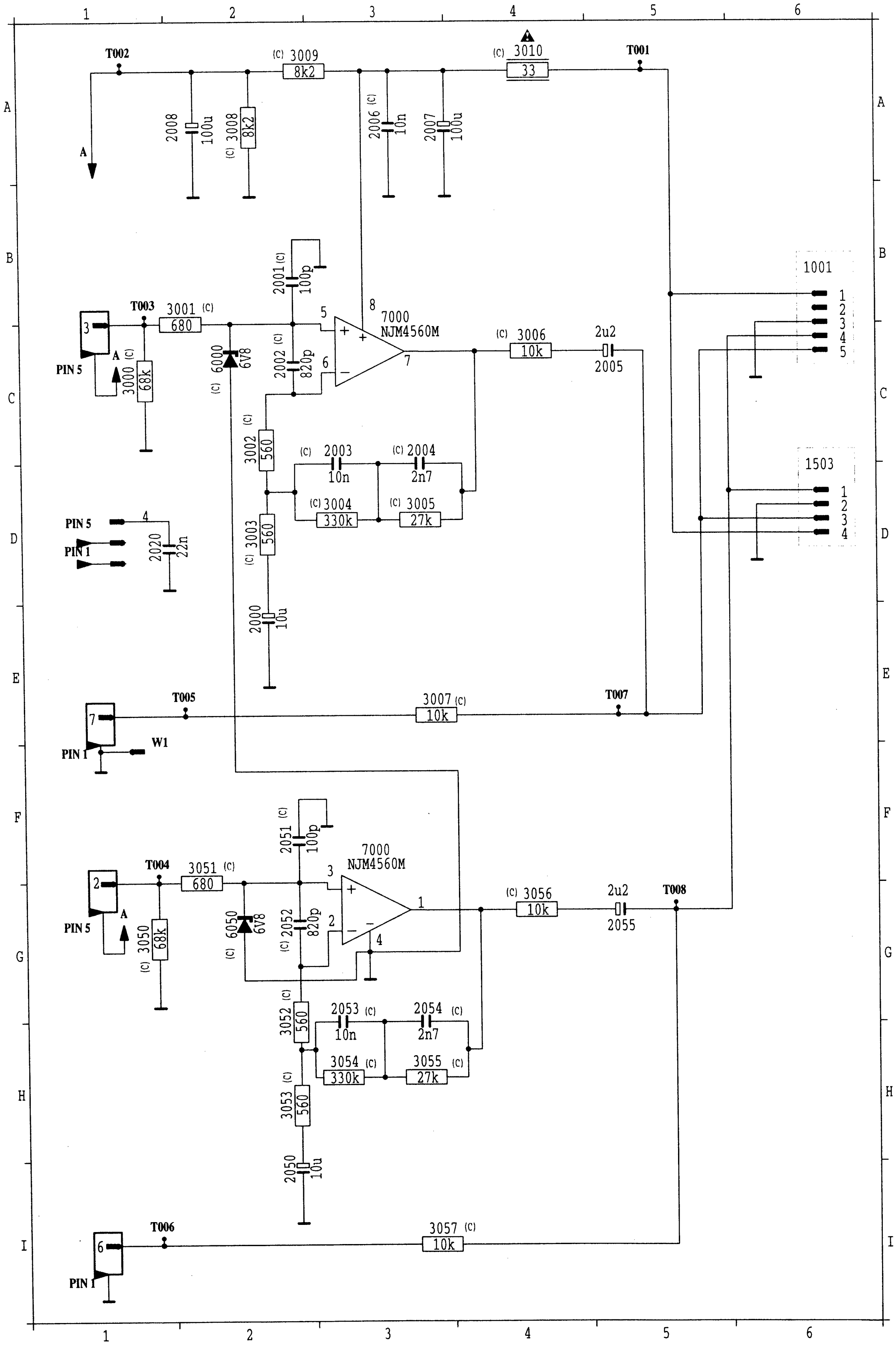
PHONO BOARD

AS660C/AS760C

TABLE OF CONTENTS

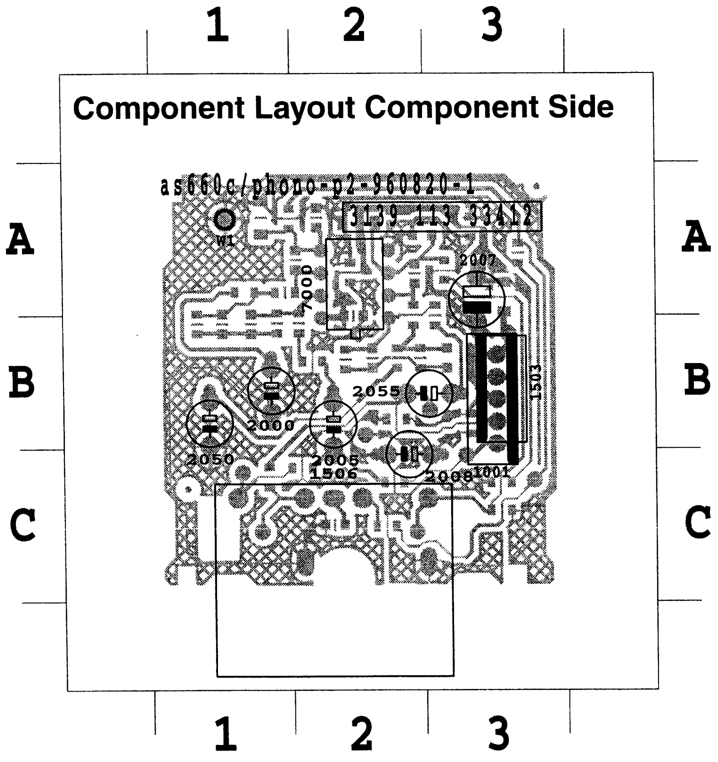
Circuit iagram 14A-2
Layout 14A-3
Partslsit 14A-4

PHONO BOARD (FOR AS660C/AS760C)

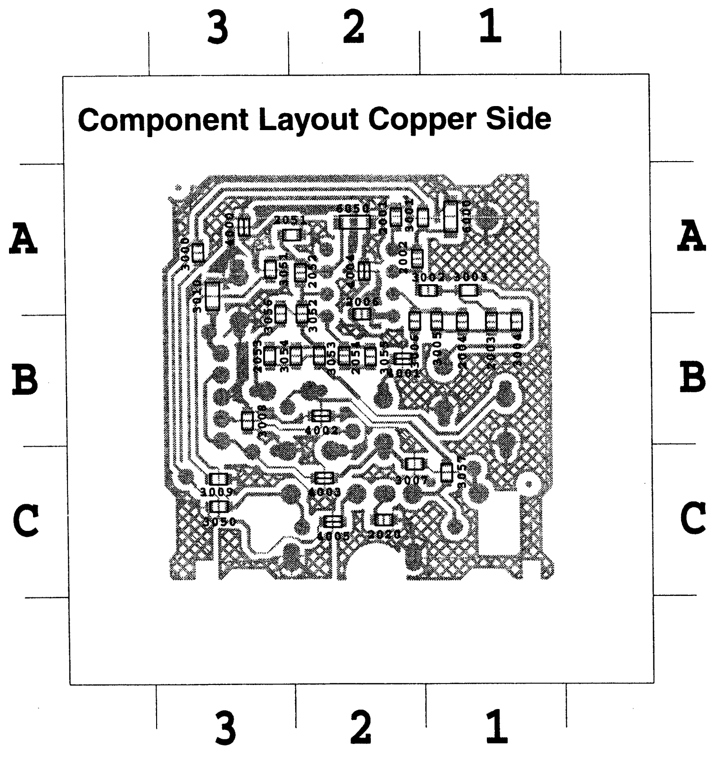

1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
T002
(C) 3009
8k2
(C) 3010
33
T001
2008
100u
(C) 3008
8k2
2006 (C)
10n
2007
100u
A
2001 (C)
100p
T003
3001 (C)
680
3
PIN 5
A
3000 (C)
68k
(C) 6000
6V8
2002 (C)
820p
5
6
8
7000
NJM4560M
7
(C) 3006
10k
2u2
2005
1001
1
2
3
4
5
3002 (C)
560
(C) 2003
10n
(C) 2004
2n7
(C) 3004
330k
(C) 3005
27k
(C) 3003
560
PIN 5
PIN 1
4
2020
22n
1503
1
2
3
4
2000
10u
T005
3007 (C)
10k
T007
7
PIN 1
W1
2051 (C)
100p
7000
NJM4560M
T004
3051 (C)
680
2
PIN 5
A
(C) 3050
68k
(C) 6050
6V8
(C) 2052
820p
3
2
4
1
(C) 3056
10k
2u2
2055
T008
3052 (C)
560
2053 (C)
10n
2054 (C)
2n7
3054 (C)
330k
3055 (C)
27k
3053 (C)
560
2050
10u
T006
3057 (C)
10k
6
PIN 1

1001	B	6
1503	D	6
1506	D	1
2000	E	2
2001	B	2
2002	C	2
2003	C	3
2004	C	3
2005	C	5
2006	A	3
2007	A	3
2008	A	2
2020	D	1
2050	I	2
2051	F	2
2052	G	2
2053	G	3
2054	G	3
2055	G	5
3000	C	1
3001	B	2
3002	C	2
3003	D	2
3004	D	3
3005	D	3
3006	C	4
3007	E	3
3008	A	2
3009	A	3
3010	A	4
3050	G	1
3051	F	2
3052	G	2
3053	H	2
3054	H	3
3055	H	3
3056	G	4
3057	I	3
6000	C	2
6050	G	2
7000	B	3
7000	F	3
W1	F	1

PHONO BOARD (FOR AS660C/AS760C)


1
2
3
Component Layout Component Side
A
B
C
as660c/phono-p2-960820-1
3139 113 33412
W1
7000
2007
1503
2055
2000
2050
2005
1506
2008
1001

1001	B	3
1503	B	3
1506	C	2
2000	B	1
2005	B	2
2007	A	3
2008	C	2
2050	B	1
2055	B	3
7000	A	2
W1	A	1


3
2
1
Component Layout Copper Side
A
B
C
3000
3001
3010
3051
6050
2051
3002
3008
4000
3003
4001
6000
3006
3052
3053
3054
2054
3055
3056
3004
3005
4002
3007
3057
3009
3050
4003
4005
2020

2001	A	2
2002	A	2
2003	B	1
2004	B	1
2006	B	2
2020	C	2
2051	A	2
2052	A	2
2053	B	3
2054	B	2
3000	A	3
3001	A	1
3002	A	1
3003	A	1
3004	B	1
3005	B	1
3006	B	2
3007	C	2
3008	B	3
3009	C	3
3010	A	3
3050	C	3
3051	A	3
3052	A	2
3053	B	2
3054	B	2
3055	B	2
3056	B	3
3057	C	1
4000	A	3
4001	B	2
4002	B	2
4003	C	2
4004	A	2
4005	C	2
6000	A	1
6050	A	2

This assembly drawing shows a summary of all possible verisons.
For components used in a specific version see schematic diagram respectively partslist.

ELECTRICAL PARTSLIST PHONO/AUX BOARD

CAPACITORS

2000	4822 124 41579	10µF 20% 50V
2001	5322 122 32531	100pF 5%NP0 50V
2002	4822 122 33806	820pF10%X7R 63V
2003	4822 122 33177	10nF 20% X7R 50V
2004	4822 122 32627	2.7nF10%X7R 50V
2005	4822 124 41576	2.2µF 20% 50V
2006	4822 122 33177	10nF 20% X7R 50V
2007	4822 124 41643	100µF20% 16V
2008	4822 124 41584	100µF 20% 10V
2050	4822 124 41579	10µF 20% 50V
2051	5322 122 32531	100pF 5%NP0 50V
2052	4822 122 33806	820pF10%X7R 63V
2053	4822 122 33177	10nF 20% X7R 50V
2054	4822 122 32627	2.7nF10%X7R 50V
2055	4822 124 41576	2.2µF 20% 50V

RESISTORS

3000	4822 051 20683	68k 5% 0.1W
3001	4822 051 20681	680R 5% 0.1W
3002	4822 051 20561	560R 5% 0.1W
3003	4822 051 20561	560R 5% 0.1W
3004	4822 051 20334	330k 5% 0.1W
3005	4822 051 20273	27k 5% 0.1W
3006	4822 117 10833	10K 1% 0.1W
3007	4822 117 10833	10K 1% 0.1W
3008	4822 051 20822	8k2 5% 0.1W
3009	4822 051 20822	8k2 5% 0.1W
3010	4822 117 12556	33R 5% 125MW.
3050	4822 051 20683	68k 5% 0.1W
3051	4822 051 20681	680R 5% 0.1W
3052	4822 051 20561	560R 5% 0.1W
3053	4822 051 20561	560R 5% 0.1W
3054	4822 051 20334	330k 5% 0.1W
3055	4822 051 20273	27k 5% 0.1W
3056	4822 117 10833	10K 1% 0.1W
3057	4822 117 10833	10K 1% 0.1W

CHIP JUMPER

4000	4822 051 20008	0R Jumper
4001	4822 051 20008	0R Jumper
4002	4822 051 20008	0R Jumper
4003	4822 051 20008	0R Jumper
4004	4822 051 20008	0R Jumper

DIODES & INTEGRATED CIRCUIT

6000	4822 130 81513	BZV55-C6V8
6050	4822 130 81513	BZV55-C6V8
7000	4822 209 83274	NJM4560D

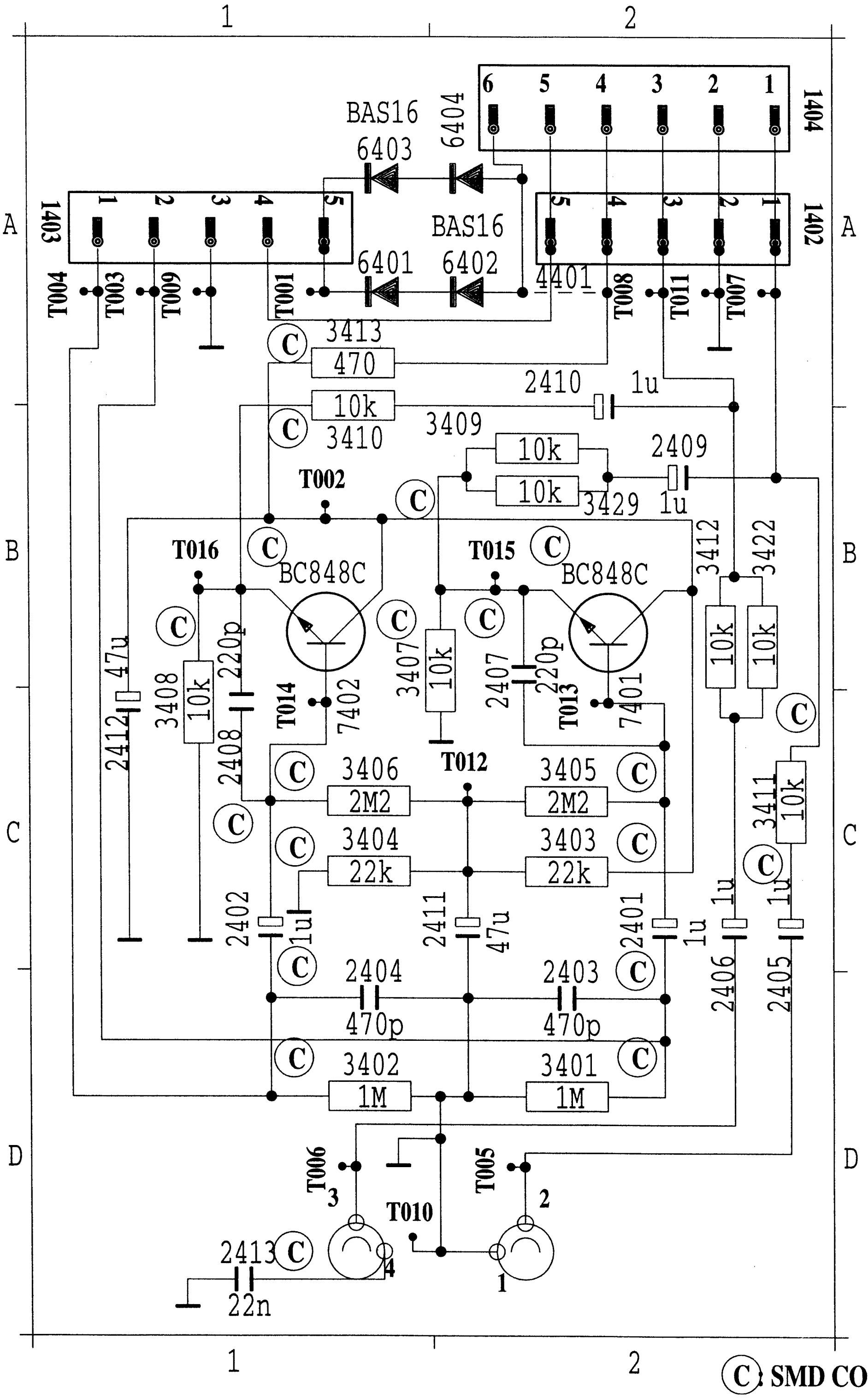
PHONO BOARD

AS665C/AS765C

TABLE OF CONTENTS

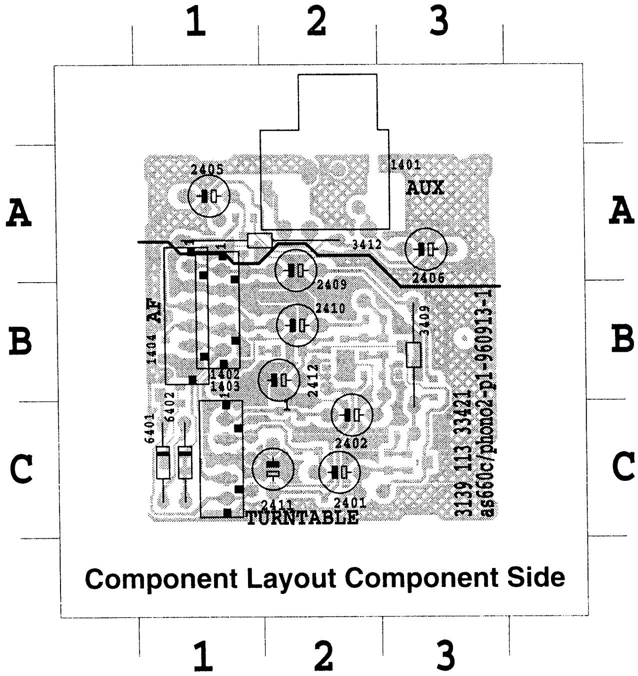
Circuit Diagram 14B-2
Layout 14B-3
Partslist 14B-4

PHONO BOARD (FOR AS665C/AS765C)


1
2
A
B
C
D
1402
1403
1404
BAS16
6403
6404
6401
6402
4401
T001
T002
T003
T004
T005
T006
T007
T008
T009
T010
T011
T012
T013
T014
T015
T016
3413
470
3410
10k
2410
1u
3409
10k
3429
10k
2409
1u
BC848C
BC848C
7401
7402
3412
3422
10k
10k
2412
47u
3408
10k
2408
220p
3407
10k
2407
220p
3406
2M2
3405
2M2
3404
22k
3403
22k
3411
10k
2402
1u
2411
47u
2401
1u
2406
1u
2405
1u
2404
470p
2403
470p
3402
1M
3401
1M
2413
22n
1
2
3
4

1402	A	2
1403	A	1
1404	A	2
2401	C	2
2402	C	1
2403	D	2
2404	D	1
2405	D	2
2406	D	2
2407	B	2
2408	C	1
2409	B	2
2410	A	2
2411	C	2
2412	C	1
2413	D	1
3401	D	2
3402	D	1
3403	C	2
3404	C	1
3405	C	2
3406	C	1
3407	B	1
3408	C	1
3409	B	2
3410	B	1
3411	C	2
3412	B	2
3413	A	1
3422	B	2
3429	B	2
4401	A	2
6401	A	1
6402	A	2
6403	A	1
6404	A	2
7401	B	2
7402	B	1

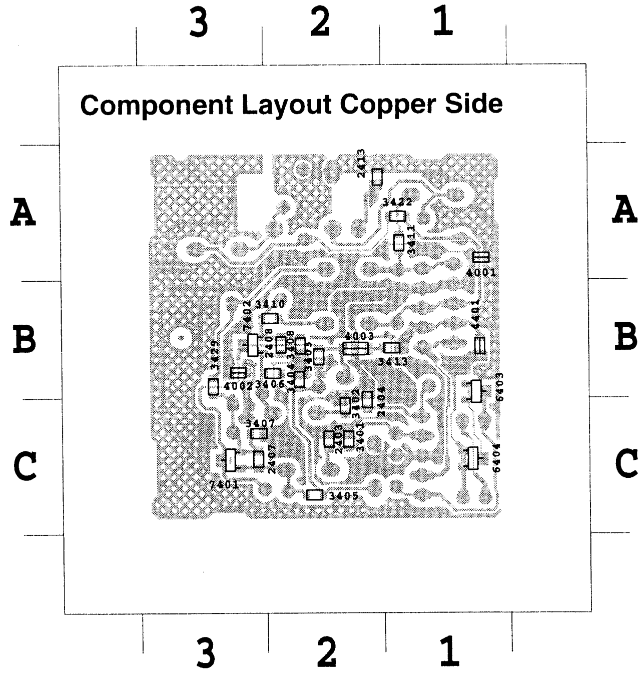
Ⓒ: SMD COMPONENTS


1
2
3
A
B
C
1401
AUX
3412
2405
2406
2409
2410
2412
2402
2411
2401
3409
1404
AF
1402
1403
6401
6402
TURNTABLE
3139 113 33421
as660c/phono2-p1-960913-1

Component Layout Component Side

1401	A	2	3409	B	3
1402	B	1	3410	B	2
1403	C	1	3411	A	1
1404	B	1	3412	A	1
2401	C	2	3413	B	1
2402	C	2	3422	A	1
2403	C	2	3429	B	3
2404	C	2	4001	A	1
2405	A	1	4002	B	3
2406	A	3	4003	B	2
2407	C	3	4401	B	1
2408	B	2	6401	C	1
2409	A	2	6402	C	1
2410	B	2	6403	B	1
2411	C	2	6404	C	1
2412	B	2	7401	C	3
2413	A	2	7402	B	3
3401	C	2			
3402	C	2			
3403	B	2			
3404	B	2			
3405	C	2			
3406	B	2			
3407	C	3			
3408	B	2			

Component Layout Copper Side


3
2
1
A
B
C
2413
3422
3411
4001
4401
3410
7402
2408
3408
3403
4003
3413
3429
4002
3406
3404
3412
3401
2404
2403
6403
3407
2407
7401
3405
6404

2403	C	2	7402	B	3
2404	C	2			
2407	C	3			
2408	B	2			
2413	A	2			
3401	C	2			
3402	C	2			
3403	B	2			
3404	B	2			
3405	C	2			
3406	B	2			
3407	C	3			
3408	B	2			
3410	B	2			
3411	A	1			
3413	B	1			
3422	A	1			
3429	B	3			
4001	A	1			
4002	B	3			
4003	B	2			
4401	B	1			
6403	B	1			
6404	C	1			
7401	C	3			

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

ELECTRICAL PARTSLIST PHONO/AUX BOARD

CAPACITORS

2401	4822 124 40242	1µF20% 63V
2402	4822 124 40242	1µF20% 63V
2403	5322 122 32268	470pF 10% 50V
2404	5322 122 32268	470pF 10% 50V
2405	4822 124 40242	1µF20% 63V
2406	4822 124 40242	1µF20% 63V
2407	4822 122 33575	220pF 5%NPO 50V
2408	4822 122 33575	220pF 5%NPO 50V
2409	4822 124 40242	1µF20% 63V
2410	4822 124 40242	1µF20% 63V
2411	4822 124 40433	47µF20% 25V
2412	4822 124 40433	47µF20% 25V

RESISTORS

3401	4822 051 20105	1M 5% 0.1W
3402	4822 051 20105	1M 5% 0.1W
3403	4822 051 20223	22k 5% 0.1W
3404	4822 051 20223	22k 5% 0.1W
3405	4822 051 20225	2M2 5% 0.1W
3406	4822 051 20225	2M2 5% 0.1W
3407	4822 117 10833	10K 1% 0.1W
3408	4822 117 10833	10K 1% 0.1W
3409	4822 051 20473	47k 5% 0.1W
3410	4822 051 20473	47k 5% 0.1W
3411	4822 117 11149	82K 1% 0.1W
3412	4822 117 11149	82K 1% 0.1W
3413	4822 051 20471	470R 5% 0.1W

JUMPER

4004	4822 051 10008	0R 5% 0.25W

INTEGRATED CIRCUITS & TRANSISTOR

6420	4822 130 81637	PMLL4148L
6421	4822 130 81637	PMLL4148L
7401	5322 130 42136	BC848C
7402	5322 130 42136	BC848C